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Effectiveness of Michigan's Key Business Tax Incentives

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I. Executive Summary

PURPOSE OF REPORT

Effective business tax incentive programs are imperative when a state is in economic decline, when its business tax burdens are considered uncompetitive, and when state budgets are strained. Michigan, unfortunately, suffers from all three of these conditions. Therefore, it can afford to pursue only the most effective tax incentive programs and manage them wisely in order to create a sustainable fiscal infrastructure.

In our report on tax incentives published in May of 2009, we concluded that no comprehensive assessment of the effectiveness of Michigan's tax incentive programs existed. The first report filled some of the information gap by creating a systematic inventory of Michigan's tax abatement programs. It also began the more difficult task of evaluating the available evidence of their effectiveness in attracting and retaining businesses.

This report builds on the extensive information assembled for the first report in two specific ways. First, it adds new information gathered from a second round of research and meetings with tax authorities, tax policy experts, and economic development professionals in Michigan.

Second, this report incorporates the new information into quantitative estimates of the costs and benefits to taxpayers of eight specific tax abatement programs. These quantitative estimates provide, for the first time, an objective comparison tool that policymakers and taxpayers can use to assess whether specific incentive programs are worth the resources devoted to them.

Sponsors of this research. The Michigan Education Association (MEA) and National Education Association (NEA) commissioned both this report and the report issued in May of 2009. The report was completed by the independent consulting firm of Anderson Economic Group, LLC, which has considerable expertise in business tax policy, tax incentives, and state tax burden comparisons. The background of the authors is described in Appendix C, "About Anderson Economic Group" on page C-1.

The sponsors of this research, and the authors of this report, hope it will provide taxpayers, policymakers, and business leaders with the basis for a comprehensive review of tax incentive programs in our state.

OVERVIEW OF APPROACH

In our previous report, we identified a total of 36 separate tax incentive programs, and described the purpose and nominal size of each when such information was available. We then selected the following eight specific tax incentive programs for a more extensive analysis:

- PA 198 (1974): Industrial Property Tax Abatement
- PA 24 (1995): Michigan Economic Growth Authority (MEGA) Act
- PA 381 (1996): Brownfield Redevelopment Financing Act
- PA 210 (2005): Commercial Rehabilitation Tax (CFT) Abatement
- PA 146 (2000): Obsolete Property Rehabilitation (OPR) Act
- PA 79 (2008) and Section 455 of the Michigan Business Tax: Film Incentives
- PA 328 (1998): New Personal Property
- PA 376 (1996): Renaissance Zone Act

We selected these eight incentives for several reasons, including their nominal size, their prominence among economic development tools, and the fact that they were designed to directly affect the location decisions of businesses. Given the paucity of information about the actual effects of these incentive programs, our analysis in the first report was limited to the relative effectiveness of these programs based primarily on professional judgement.

In this report, we go beyond the first report and estimate the likely effect on employment, earnings and tax revenues of each of these policies. This adds a new type of evidence to the current mix of theoretical controversy and empirical difficulties that characterize the analysis of tax incentive programs and their effectiveness.

Quantifying the effectiveness required several steps, including:

- The collection (or, frequently, estimation) of base data on each program;
- The identification of a plausible alternative policy;
- The creation of a rigorous economic model that incorporates both the incentive effects of the abatement program and the opportunity cost, including the foregone tax revenue and foregone incentive effects of an alternative policy.

This approach allowed us to separate the various, and often conflicting, claims about incentive programs from the essential factors that govern the net benefit of the program to the taxpayers of the state.

ALTERNATIVES TO A TAX ABATEMENT POLICY

To truly understand the costs and benefits of a tax incentive program, we must compare it to the costs and benefits of an alternative policy. Choosing one policy means that you cannot choose the other, and both have potential costs and benefits. Comparing a program to a reasonable foregone alternative is a crucial and often neglected step in policy analysis.

In this report, we choose as the alternative policy an identical or lower overall tax rate for the entire tax base that is potentially eligible for the abatement.¹ We then compare each of the tax incentives we analyze to the alternative policy.²

We model each of the eight abatement programs separately, and in isolation from the other programs, although we note several important interactions between the different programs. Failing to compare the tax incentive to an alternative policy would have the unrealistic effect of ignoring the opportunity cost of not pursuing another policy.³

Alternative Policy as Analytical Tool. It is important to note that comparing the tax incentive policy to a plausible alternative policy is an analytical approach, not advocacy of the alternative policy. As we note below, the alternative policy was selected to highlight the effects of the tax incentive policy, not to maximize tax revenue or achieve some other goal.

In particular, we want to separate the *effectiveness* of the incentive in stimulating new business activity (including adding employment) from the *cost* of granting the abatement (including the additional taxes, the resulting lower employment at other businesses in the state, and any reduction in government tax revenue). Separating these allowed for a rigorous analysis of the net benefit of each tax program.

As in the first report, we distinguish a “tax abatement” or “tax incentive” from general changes in tax policy. We define a business “tax abatement” or “tax incentive” as any law or program that allows a specific business or set of businesses located on specific plots of land to incur a reduced tax liability because of the business’ location, behavior, or type.⁴

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1. In general, an alternative policy could be a cut in the sales tax, income tax, Michigan Business Tax (MBT) or other tax combined with the elimination of the tax incentive; or keeping the tax rates the same while eliminating the incentive. Any change in tax revenue that would result could then increase or decrease spending on current or new priorities.
 2. We model a lower tax rate for six of the tax incentives, and an identical tax rate for two of the tax incentives. The two for which we use an identical tax rate are the Brownfield Redevelopment Financing Act and the Commercial Rehabilitation Act. For both of these tax incentives, the nominal tax expenditures are so small, as compared to the total size of the affected base, that an equivalent rate change would be impractical to make.
 3. As we discuss, one widely-cited analysis of the Film Incentives in Michigan did not consider the opportunity cost. Under the assumption that the incentive came at no cost, the authors of that study found that the incentives for the film industry were very effective. See Steven R. Miller and Abdul Abdulkadri, “The Economic Impact of Michigan’s Motion Picture Production Industry and the Michigan Motion Picture Production Credit,” Center for Economic Analysis, Michigan State University, February 6, 2009.
 4. For example, a reduction in a tax rate, or exemption from a tax base, for businesses that locate in a specially-designated area, or for a specific business that promises to operate in a specific industry, is an abatement. However, a reduction in the general business tax rate for all businesses in the state or in a taxing jurisdiction is not an “abatement;” it is a change in tax policy. Similarly, we consider *bona fide* special assessments, user fees, locally-voted tax increases or decreases that result in different tax rates in different parts of the state, and generally available provisions of the tax code (such as exemptions and deductions for normal business activity, and assessing practices) to be parts of the general tax structure of the state.

MODELING THE EFFECTS

Modeling the effects of the tax incentive program involved several steps:

- For each program, we identify the tax base, which we divide into a non-abated tax base (where the statutory tax rate is imposed), and an abated tax base. For tax abatement programs that involve multiple taxes, or an outright subsidy of operating expenditures, a hybrid tax base was constructed.
- We estimate behavioral parameters including the tax-price elasticity of supply, and the direct effectiveness of the incentive.
- We identify, as part of the alternative policy, a proportional reduction in the statutory tax rate that would accompany an elimination of the tax abatement program.
- For the extensive calculations performed for multiple programs under varying assumptions, we coded the equations and variables into a mathematical model that performed the calculations. These are described in detail in Appendix A, “Model Methodology” on page A-1.

We estimated the net benefit of each program using the following measures:

- The net effect on tax revenue, compared to the alternative policy. This net effect reflects the loss of tax revenue from jobs due to any effectiveness of the incentive program; the loss of tax revenues from a marginally lower tax rate on other businesses under the alternative policy; and the effect of any increase in the tax base due to the change in the tax rate.
- The net employment and earnings effects implied by the change in taxable activity.

Meetings with Stakeholders and Experts. The method we used relied upon quantitative data, subjectively-determined factors, as well as professional judgment. We took several steps to ensure that we had ample information, and purposely surveyed other experts on key issues of professional judgment. These steps included the following:

- We held several meetings with tax experts, business groups, and local government representatives, in order to better inform our inputs and analysis.
- We held two sessions with panels of experts for our preliminary analysis for this report. One session was with tax policy experts, and the other was with economic development professionals with a stakeholder interest in at least some of the tax abatement programs.
- We also met with Michigan Economic Development Corporation (MEDC) representatives for their comments on our model inputs and assumptions, and had several other communications with tax policy experts, Michigan Department of Treasury personnel, and economic development professionals.

Of course, the conclusions of the report are those of the authors.

OVERVIEW OF FINDINGS

1. There is Wide Variation in the Effectiveness of the Programs

We found wide variation in the effectiveness of Michigan's business tax incentives in terms of their cost effectiveness, job creation, and earnings creation. We found that two of the programs we analyzed were effective in that they resulted in job creation and additional tax revenues, three were ineffective in that they resulted in fewer jobs and less tax revenues than would result from the alternative policy, and three had mixed or small results.

Effective. The effective programs are those that have the effect of leading to more job creation, and increased tax revenues, than if the program was eliminated and replaced with a tax cut for all businesses in the relevant tax base. The two programs with positive effects in terms of both job creation and increased tax revenues are:

- PA 198 (1974), the Industrial Property Tax Abatement
- PA 146 (2000), the Obsolete Property Rehabilitation Act

Ineffective. The ineffective programs, in terms of their negative impact on both job creation and the generation of new tax revenues are:

- PA 24 (1995), the Michigan Economic Growth Authority Act⁵
- PA 376 (1996), the Renaissance Zone Act
- The Film Incentives found in PA 79 (2008) and Section 455 of the Michigan Business Tax.

Mixed or Small Effect. We found that one tax incentive program produced a mixed result, in that it resulted in a positive impact on job creation but a negative impact (especially in the long run) on tax revenues. The program with the mixed result is:

- PA 328 (1998), the New Personal Property Incentive

We found that two tax incentive programs resulted in a small amount of additional jobs in both the short-run and the long-run, while the impact on net direct tax revenues appears to be negligible. The two programs with only small impacts on job creation and tax revenues are:

- PA 381 (1996), the Brownfield Redevelopment Financing Act⁶
- PA 210 (2005), the Commercial Rehabilitation Tax Abatement⁷

5. See Finding 6 on page 7, regarding changes in the MEGA program over time.

6. The brownfield incentive has the additional benefit of cleaning up some contaminated properties.

7. The Commercial Rehabilitation Tax Abatement incentive is new, and very little information is available thus far for evaluating this program.

See Table 1, “Effect of Alternative Policy Change: Abatement Cancellation and Tax Rate Reduction Job Creation Performance,” on page 9 and Table 2, “Effect of Alternative Policy Change: Abatement Cancellation and Tax Rate Reduction Tax Revenue Impact,” on page 10.

2. Effective Programs Address Cost Disadvantages and Support Creation of Long-Lasting Business Activity

The effective Industrial Property Tax Abatement and Obsolete Property Rehabilitation Act abatements target broad classes of businesses in diverse geographic areas. They abate taxes that strongly affect the ability of a firm to operate profitably in Michigan. Business decision-makers are able to use those abatements to make investment decisions in the long-term interest of both the business and the state economy. They are not conditioned on achieving specific job creation or tax revenue targets, nor on narrow industry or technology criteria.

3. Some Ineffective Programs Subsidize Current Operations that are Unlikely to be Long-term

In general, the programs that provide outright subsidies for operations that need not be located in the state are likely to fail. In particular, the Film Incentive subsidizes current production costs, with little emphasis on investment. The film industry has a long history of moving where the incentives are greatest, so current subsidies have little effect on long-term commitments to the state.

4. It is Possible to Replace some of the Larger Tax Incentive Programs with the Alternative Policies and Gain Tax Revenues and Jobs

In terms of foregone tax revenues, the ineffective programs (the MEGA Act, the Film Incentives, and the Renaissance Zone Act) are among the largest incentive programs. Eliminating them as they existed at the time of this analysis,⁸ and replacing them with well-designed alternative policies, would promote more job creation and generation of tax revenue than if the policies were kept in place.

We estimate that the three ineffective programs had the effect of reducing employment by approximately 25,000 jobs, while also resulting in less tax revenue, as compared to the alternative policies. Moreover, results from the alternative policies we considered are for direct effects only, which would lead to

8. Since some incentive programs, such as MEGA and the Brownfield incentive, have undergone several significant reforms since their inception, the scenario analyzed in this report is based on the credits currently in place, many of which were implemented before the changes in the program. In these cases, our analysis shows what would have happened had we canceled the programs and pursued an alternative policy before the current incentives were approved.

additional rounds of positive indirect effect that we have not attempted to quantify.

5. Ending Ineffective Programs Requires a Transition Plan

The state has taken on certain obligations to recipients receiving the benefits of these abatement programs, so it is not feasible to simply terminate them without a transition plan. For example, the film incentives could be terminated immediately, and most contractual obligations for incentives that have been awarded would be completed within a few months, as the film productions receiving incentives are completed. Undoubtedly there would be few film industry jobs in Michigan without this program. However, the jobs created by the film credit come at a high cost. Aside from the high cost per job, which requires continuing subsidies to remain in the state, the overall cost of the subsidies to the film industry divert funding that could be spent on other priorities.

The Renaissance Zone Act is already scheduled to lapse, although obligations to current recipients would continue until they gradually expire over the next several years. Ending, or scaling back, the MEGA program would require a legislative action, and obligations to current recipients would continue for several years.

6. Some Programs can be Made More Consistent with their Original Mission

For some of the programs, the mission appears to have changed substantially since the program was first created. For example the Brownfield Redevelopment Financing Act incentives have been given to blighted and functionally obsolete projects that do not actually involve brownfield clean-up, and the Michigan standard for qualifying as a brownfield for PA 381 credit is much lower than the requirements for qualifying for Superfund clean-up under the federal standards. It may be appropriate to restore the brownfield incentive to its original purpose, with stricter standards for qualifying as a brownfield project, while shifting blighted and commercially obsolete property incentives to the PA 146 or PA 210 programs.

It should be noted that the tax credit program under the MEGA Act has expanded over time, and the criteria for awards has shifted, so that there are currently outstanding MEGA awards from at least three different sets of criteria that vary in terms of selectivity. While our analysis shows that the program has actually resulted in fewer jobs created and less tax revenue than could be achieved with a tax cut for the relevant tax base, this result is driven largely by incentive awards from before the 2008 changes in the MEGA program. Some of the individual projects receiving MEGA awards have been successful, even if the program as a whole has been ineffective. Furthermore, the 2008 changes appear to be generally positive changes. It is likely that a reformed MEGA program, with limitations on funding and award criteria (including the 2008

reforms) that force it to be more selective, would be more effective than the current program.

7. Incentive Programs Cannot be the Cornerstone of an Economic Recovery Policy for the State of Michigan

Some of the programs we examined had positive job creation effects, and we acknowledge that any analysis of these programs, given the data limitations and other difficulties, is imprecise. Some of the incentive programs also result in more tax revenue generation than would occur if the programs were eliminated. However, collectively the direct impact on job creation summarized in Table 1 below account for a very small proportion of the jobs in Michigan, at a time when more than 700,000 Michigan workers are counted as unemployed.⁹

While some of these abatement programs produce positive results, it simply is not practical to expect tax incentive programs to address economic problems of the magnitude facing Michigan. Instead Michigan should rely upon broader policies that have proven to promote economic recovery, including improving the tax climate, improving the regulatory climate, and promoting the education level of the Michigan workforce.

LIMITATIONS OF THIS REPORT

While this report includes quantitative analyses built on extensive data and analysis, there are several limitations.

- This report does not make any specific recommendations of alternative fiscal policies, but rather uses the analytical approach of comparing the tax incentive to a plausible alternative with a similar direct fiscal impact.
- We are not utilizing a human capital model that projects future potential benefits from an alternative policy of increased spending on education or social welfare priorities.
- We are only modeling first-round effects in this model. Therefore, we do not account for second-round effects such as incentives that generate new economic activity. Such second round effects would include changes in personal income and tax receipts that follow the direct effect changes in employment or investment.

9. U.S. Bureau of Labor Statistics, data extracted December 3, 2009, which does not account for discouraged workers not actively seeking employment.

Table 1. Effect of Alternative Policy Change: Abatement Cancellation and Tax Rate Reduction Job Creation Performance

Job Creation Performance in AEG Simulation	Tax Incentive	Direct Employment Gained (Lost) by Replacing Incentive with Comparably-Sized Tax Reduction	
		3 Year Time Horizon	10 Year Time Horizon
More Jobs with Incentive Program	PA 198 (1974): Industrial Property Tax Abatement	(11,163)	(4,188)
	PA 146 (2000): Obsolete Property Rehabilitation Act	(11,530)	(8,233)
	PA 328 (1998): New Personal Property	(10,178)	(2,813)
Similar Amount of Jobs With Incentive Program	PA 381 (1996): Brownfield Redevelopment Financing Act	(1,737)	(1,303)
	PA 210 (2005): Commercial Rehabilitation Tax Abatement	(224)	(179)
More Jobs with Alternative Policy	PA 79 (2008) and Section 455 of MBT: Film Incentives	4,252	6,591
	PA 24 (1995) Michigan Economic Growth Authority Act ^a	8,284 ^b	17,739 ^b
	PA 376 (1996): Renaissance Zone Act	12,806 ^c	17,708 ^c

Analysis: Anderson Economic Group, LLC

Notes:

See detailed simulation results in Table 5 of Section 4.

^aThis analysis includes all credits still in effect in 2009, including credits issued under at least three different versions of the MEGA program.

^bEstimates are for policy change affecting all MEGA credits issued since 2000. Changing only the post-2008 MEGA policy would have a different effect.

^cEstimates are for all Renaissance Zone credits. Given the forthcoming phase-out of the Renaissance Zone act, changing the law post-2009 would have a different impact.

Table 2. Effect of Alternative Policy Change: Abatement Cancellation and Tax Rate Reduction Tax Revenue Impact

Tax Revenue Impact in AEG Simulation	Tax Incentive	Direct Tax Revenue Gained (Lost) by Replacing Incentive with Comparably-Sized Tax Reduction, Millions	
		3 Year Time Horizon	10 Year Time Horizon
More Tax Revenue with Incentive Program	PA 198 (1974): Industrial Property Tax Abatement	(\$16.4)	(\$3.6)
	PA 146 (2000): Obsolete Property Rehabilitation Act	(\$21.3)	(\$17.9)
Similar Amount of Tax Revenue with Incentive Program	PA 381 (1996): Brownfield Redevelopment Financing Act	\$0.6	\$1.2
	PA 210 (2005): Commercial Rehabilitation Tax Abatement	(\$0.2)	(\$0.1)
More Tax Revenue with Alternative Policy	PA 328 (1998): New Personal Property	\$4.1	\$41.7
	PA 79 (2008) and Section 455 of MBT: Film Incentives	\$25.0	\$37.0
	PA 24 (1995) Michigan Economic Growth Authority Act ^d	\$44.5 ^b	\$57.9 ^b
	PA 376 (1996): Renaissance Zone Act	\$15.2 ^c	\$26.4 ^c

Analysis: Anderson Economic Group, LLC

Notes:

See detailed simulation results in Table 5 of Section 4.

^aThis analysis includes all credits still in effect in 2009, including credits issued under at least three different versions of the MEGA program.

^bEstimates are for policy change affecting all MEGA credits issued since 2000. Changing only the post-2008 MEGA policy would have a different effect.

^cEstimates are for all Renaissance Zone credits. Given the forthcoming phase-out of the Renaissance Zone act, changing the law post-2009 would have a different impact.

II. Tax Incentives: Purposes and Problems

Michigan offers many programs and initiatives, often overlapping, that are intended to attract new businesses to the state and retain current businesses that may be considering leaving the state. Such incentives typically lower a business' liability for property taxes, the MBT, and/or income taxes. These programs are, in effect, economic development programs that target businesses engaging in certain favored activities such as creating or retaining jobs, moving into blighted areas, or that otherwise meet the specific requirements of a piece of tax legislation.

By their nature, targeted tax incentives give advantages to some businesses and classes of businesses over others. Indeed, they must be specifically authorized by the state legislature, since Article IX, Section 3 of the Michigan Constitution requires uniformity in taxation of real and personal property not specifically exempt by law. This requirement means that any tax incentive that is not uniform, but instead is targeted to new businesses or retaining current businesses, must be specifically authorized by a statute from the state legislature. These authorized deviations from uniform taxation take two forms—stand-alone laws granting tax credits or abatements, and provisions of the Michigan Business Tax Act, PA 36 of 2007.¹⁰

The operation of these programs can vary widely, but for the most part, they are intended to promote certain economic activities through the mechanism of tax incentives. One program we consider, the film incentives, also offers direct subsidies to qualifying businesses for making movies in Michigan.

This section identifies the purpose of business tax incentives, discusses several problems with Michigan's current set of business tax incentives, including the major tax incentives addressed by this report, and identifies the eight key business tax incentives discussed in further detail in later sections.

PURPOSES OF INCENTIVES

The tax incentives identified in Michigan statute generally appear to serve at least one of four purposes. We discuss these possible purposes in more detail in our first report, and summarize them as follows:

10. We distinguish in this report between "abatements" and more general tax policy changes. A reduction in the general business tax rate for all businesses in the state is not an "abatement." Instead, it is a change in tax policy. Similarly, *bona fide* special assessments, user fees, locally-voted tax increases or decreases that result in different tax rates in different parts of the state, and exemptions and deductions for normal business activity are part of the general tax structure of the state. At times this distinction can be blurred, but the eight particular incentive we analyze in this report we consider to be abatements and not general tax policies.

Address Cost Disadvantages. Some incentives are intended to reduce the cost of doing business in Michigan for a particular type of business, either across an entire industry or for those specific businesses that are more particularly sensitive to cost when making relocation decisions. The Film Incentives and the MEGA program were, at least to some extent, designed to target businesses unlikely to locate in Michigan absent the incentive. A possible purpose for a tax incentive program is to selectively reduce the cost of investing or employing workers in the state when such a cost disadvantage is otherwise likely to result in the loss of such investment and employment.¹¹

Revitalize Distressed Local Economies. Some incentives are dedicated to increasing business activity or improving the condition of property in a specially-designated geographic area. This is typically an area with a distressed economy.

Encourage Beneficial Behavior. Some tax abatement programs appear to be designed to encourage business activity that is considered especially beneficial to the state. Many types of business activity produces positive “spillover” effects, starting with the benefits of employing workers and paying taxes in the state. Other examples include incentives meant to reduce pollution, rehabilitate environmentally contaminated sites, and encourage investment in research and development.

Industrial Policy. Some incentives appear to target a specific industry or company that the government has chosen to aid, or to incentivize specific business activities that are not obviously beneficial to the broader economy, but reflect legislative opinions and priorities. There are several abatement programs that appear to be intended to identify and attract specific industries to the state. The state appears to have selected these industries on the basis of their expectation of robust future growth, ability to provide good jobs; or to diversify the employment base.¹²

11. This is akin to a business lowering the price of its products to attract certain customers, which is technically a form of price discrimination. Price discrimination is normally an attempt to identify certain narrow classes of customers that are more sensitive to cost, and give them a discount while maintaining higher rates on other customers. Classic examples are the senior discount offered by many restaurants, coupons targeted to certain groups, and travel pricing that varies depending on when tickets are purchased.

12. Michigan’s government takes actions other than tax abatements that could be described in these terms, such as the renewable energy portfolio standard, requiring that electricity sellers obtain a certain minimum percentage of their electricity from renewable sources, that may be justified in part by the promise of green jobs attracted to the state.

**PROBLEMS
IDENTIFIED IN FIRST
AEG REPORT**

These four purposes of targeted tax incentives have at least some merit, which we do not attempt to evaluate here. As a practical matter, however, there is a difference between stating that these are the purposes of the programs and actually pursuing incentive programs that achieve these goals. We noted in our first report that there is a substantial disconnect between the stated goals, or goals we infer in an attempt to understand the intent of these programs, and the implementation of the incentives in ways that advance these goals. In particular, we noted the following:

Lack of Focus on Objective

The state of Michigan makes no systematic attempt to measure the degree to which programs designed to create, attract, or save jobs in the state actually do so. Indeed, no systematic measurement of actual jobs is being used, and no firm criteria exist for determining if employment at the business receiving the credit is genuinely new to the state.

Some of the programs have at least a minimal evaluation and certification built into the process, although usually they are greatly affected by self-interest. Abatements based on construction or rehabilitation of property are typically evaluated based on one identifiable criteria—whether the construction was completed by a certain date—but little attempt is made to evaluate whether the program resulted in new job creation or new economic activity, apart from self-reported data typically collected at the application stage.¹³

Moreover, some incentives are so widely used that their reported success reveals a systematic weakness in Michigan's business tax system rather than specific opportunities to attract jobs with the judicious use of the incentive.

Lack of Data

There is currently no proper, publicly-available inventory of business tax incentive programs. Such an inventory should list the programs, statutory authorizations, intended purposes, eligibility criteria, nominal or estimated amount of tax revenue foregone, and nominal or estimated effectiveness in attaining the intended purpose.¹⁴

13. As we note below, the Michigan Economic Development Corporation uses information it has collected to revoke credits to recipients who have not lived up to their claims.

14. Michigan Department of Treasury's *Executive Budget Appendix on Tax Credits, Deductions, and Exemptions*, Fiscal Year 2009, provides a listing of business tax incentive programs, and also estimates the foregone tax revenue of programs affecting all state-level taxes, including business taxes, property taxes, and others. While this information is an important component of a proper inventory, it does not include other critical information, and does not provide any assessment of the effectiveness of the program.

No one agency administers or approves Michigan tax incentives. The majority of tax incentives in our inventory are awarded by the local unit of government, with final approval from the State Tax Commission. Those tax incentives involving business tax abatements are generally approved by the MEDC or the MEGA. Other incentives, including the Brownfield Redevelopment Tax Abatement and the recently passed film incentives, are approved by specialized offices—the local Brownfield Redevelopment Authority and the Michigan Film Office, respectively.

Self-Interested Reporting of Results

Most of the programs we evaluated rely on self-interested reporting to estimate projected results. For most of the incentives, there is little or no auditing or verification of the information.¹⁵

Self-interest also plagues the awarding of some incentives. Awards of incentives are often accompanied by public announcements from program administrators and elected officials trumpeting the number of future jobs to be created. If, however, the project does not proceed or fails to produce the claimed benefits, there is little accountability. Thus, both the recipient company and the state government often have an incentive to allow inflated reports of job creation to stand unchallenged.

Why It Matters

It is possible that Michigan could encourage more jobs, and bring in the same or greater tax revenue, by properly reforming certain tax incentives. Yet with so little information available, it is difficult to determine which programs are effective, which are counterproductive, and whether and how existing programs could be improved.

To the extent that incentive programs are ineffective in promoting job creation and economic growth, Michigan seems to be getting the worst of both worlds: a poor public impression of high tax rates, while giving up the tax revenue that such rates would imply. Michigan policymakers should instead consider whether widely-abated taxes should be lowered across the entire state, rather than abated on a piecemeal, but widespread, basis. In such cases, a lower rate uniformly levied could bring in as much tax revenue and encourage more jobs.

15. The Michigan Economic Development Corporation can revoke future credits if a recipient does not live up to its claims, and has done so in some cases.

EIGHT KEY BUSINESS TAX INCENTIVES

In our first report we selected eight specific tax incentive programs for further review, and considered the same eight incentive programs in this report. These eight tax incentive programs are:

- PA 198 (1974): Industrial Property Tax Abatement
- PA 24 (1995): Michigan Economic Growth Authority Act
- PA 381 (1996): Brownfield Redevelopment Financing Act, as amended
- PA 210 (2005): Commercial Rehabilitation Tax Abatement
- PA 146 (2000): Obsolete Property Rehabilitation Act
- PA 79 (2008) and Section 455 of the Michigan Business Tax: Film Incentives
- PA 328 (1998): New Personal Property
- PA 376 (1996): Renaissance Zone Act

As we noted in our first report, there are at least 36 business tax incentive programs defined in Michigan law, which can be used to reduce property, income, or business tax liabilities of businesses. From this list of 36 incentives, we selected these eight incentives for further analysis. We selected these eight incentives in particular because they, more than the other incentives offered by the state, appear to be the most directly designed to affect location decisions of businesses considering where to locate new economic activity. These eight incentive programs also included some of the largest tax incentive programs, and appeared to be the ones most touted by some of the strongest advocates of such programs.¹⁶ Other incentive programs were often incentives for hiring or research and development, which may have a significant impact on those decisions by businesses, but did not appear to be directed at influencing location decisions.

PA 198: Industrial Property Tax Abatement. The industrial property abatement (IPT) was enacted in 1974, making it one of the oldest tax incentive programs in Michigan. It is also commonly referred to as the industrial facilities tax abatement, or IFT. Michigan had experienced a decline in investment in industrial facilities before 1974, which led to claims that Michigan property taxes were too high for companies to restore industrial property in Michigan, especially when facing competition from strengthening foreign markets. The law was intended to encourage companies to restore existing Michigan locations rather than relocating to other states or countries.¹⁷

¹⁶ Economic development corporations we contacted or gathered materials from include the MEDC, the Detroit Economic Development Corporation, the Detroit Chamber of Commerce, the City of Ypsilanti Planning and Development Department, the Iron County Economic Development Corporation, the Lansing Economic Development Corporation, Midland Tomorrow, the Middle Michigan Development Corporation, Saginaw Future, Inc., Oakland County business services, the Enterprise Group of Jackson, and the Michigan Township Association.

Recipients of the industrial property tax abatement pay an industrial property tax in lieu of the property tax, and the industrial property tax is 50 percent of the property tax. In general, the tax abatement can be certified for no longer than 12 years, with some discretion given to local governments for longer individual projects. The new facility typically will receive a tax reduction of 50 percent of what the property tax otherwise would be, in addition to the State Education Tax. IPT abatements must first be approved by local taxing units and require the local authority to forego local property tax revenues.

According to our stakeholders' panel, some notable recent recipients of the IPT abatement include Compuware for its headquarters in downtown Detroit, General Motors for its plant in Delta Township near Lansing, and Jackson National Insurance Co. for its headquarters in Alaiedon Township near Lansing. Detroit may benefit from the Compuware incentive because of the city income tax revenues from Compuware employees. Other IPT abatement recipients in other areas, such as those with no income taxes, may provide little offsetting revenues from other sources that would occur absent the incentive, particularly for businesses choosing between two locations in Michigan.

The accountability mechanism in the IPT abatement program is largely limited to confirming initial eligibility and verifying that the renovations or construction warranting the exemption actually occurs. PA 198 also allows the local government authority to revoke an IPT abatement if the property does not meet required conditions, such as failure to comply with timing requirements or failing to proceed with the project. The only existing job-creation figures for this program are self-reported, and no systematic evaluation or verification of the self-reported figures occurs.¹⁸

17. To be eligible for the IPT abatement, an applicant property (disregarding special cases) must: (a) lie within a plant rehabilitation or industrial redevelopment district (created by local governments' own initiative or at the request of the owners of at least 75 percent of the area's industrial property); (b) be used for manufacturing, agricultural processing, processing of good or services, or for a high-technology activity; and (c) require construction, restoration, or replacement to prevent the facility from being considered "obsolete" (defined as less than economically efficient). Before a plant rehabilitation or industrial redevelopment district may be established, at least 50 percent of the industrial property in the area must be considered "obsolete." Citizens Research Council of Michigan, *Survey of Economic Development Programs in Michigan*, 2007, p. 52.

18. Relying on the self-reported figures, the Michigan Senate Fiscal Agency estimated that PA 198 has accounted for 16,500 projects, 1.3 million jobs retained, 500,000 jobs created and \$81 billion invested. Senate Fiscal Agency, *State Notes*, 2005. Similarly, the Department of Treasury credits the Industrial Facility Tax Abatement with the creation of 327,820 new jobs between 1984 and 2006. Citizens Research Council of Michigan, *Survey of Economic Development Programs in Michigan*, 2007, p. 52. Since these analyses rely on the self-reported job creation figures, they must be considered an upper-bound when considering the tax abatement's effectiveness.

Although both the local government and the State Tax Commission must ultimately approve of all IPT abatements, as a practical matter IPT applications are rarely denied. Indeed, the general perception in the business community appears to be that an industrial plant can get one almost anywhere it chooses to locate in Michigan.

As we noted in the previous report, a Land Policy Institute report on PA 198 by Wayne State University Professor Gary Sands and Michigan State University Professor Laura Reece found that abatements have, on the whole, not been a successful economic development strategy. They found that PA 198 abatements have been most effective in transportation equipment manufacturing industries, where Michigan has always been strong, but not effective in introducing more high-tech jobs to the state.¹⁹ Another study by the same authors found that industrial tax abatements are so widely available that they do little to affect site location decisions of businesses.²⁰

What is not measured in these analyses, however, is the number of marginal business location closures that occurred because they were in existing locations that did not qualify for PA 198 abatements, even though the business may have continued operating at that location if its taxes were lowered. Moreover, it is likely that a large majority of these business expansion receiving IPT incentives would have occurred in Michigan without the abatements, although often at a different location within the state. Thus, there is at least a theoretical reason to believe that more economic activity could be promoted by lowering property tax rates a smaller amount for every Michigan business, rather than granting a large abatement only to those expanding in new locations.

PA 24 (1995): Michigan Economic Growth Authority Act. PA 24 established the Michigan Economic Growth Authority, or MEGA. This act additionally created tax incentive opportunities for high-technology business or any investments expected to yield a significant amount of job creation. The MEGA incentive was originally a value-added tax abatement under Michigan's Single Business Tax (SBT), but now is in the form of a business income tax credit under the recently-enacted Michigan Business Tax (MBT).²¹ The MEGA Act specifies that the size and duration of tax credits depends upon self-reported data provided in the applications.²²

The MEGA Act as it originally was written primarily targeted high-technology businesses, including those in manufacturing, mining, research and develop-

19. Gary Sands and Laura Reese, "Current Practices and Policy Recommendations Concerning PA 198 Industrial Policy Tax Abatements," Lansing Policy Institute, Michigan State University, 2007, p. iv.

20. Laura Reese and Gary Sands, "The Equity Impacts of Municipal Tax Incentives: Leveling or Tilting the Playing Field?" *Review of Policy Research*, Volume 23 (2006), p. 91.

ment, wholesale and trade, and office operations. Later amendments have expanded the range of eligible industries.²³

The Michigan Economic Growth Authority is responsible for determining that the criteria for the tax incentive, established in the agreement between the applicant business and MEGA, has been met prior to the extension of tax credits.²⁴ The statute states that any statements made by the eligible business (regarding number of jobs created, length requirement for job retention, etc.) that prove to be in violation of the agreement between the business and MEGA may result in the revocation of either the business's designation as an authorized business, or in a reduction of future credits.²⁵ The MEGA Act also requires tax credit recipients to certify that projects outlined in the tax credit application would not have gone forward without the MEGA incentive they are seeking.

The MEGA Act lays out standards for revocation of tax credits, which appear to be followed to a greater extent for MEGA tax credits than for many of the other incentive programs. Indeed, some MEGA credits have been revoked for failure to meet the requirements that were the basis for granting the credit. Moreover, the Michigan Economic Growth Authority has maintained a regular auditing program, which appears to be expanding following the 2008 legislative changes to the program.

According to data collected by the MEDC, between April 1995 and October 2006, the estimated amount of taxes abated across all 299 MEGA grant projects totaled over \$2 billion.²⁶ Even using the MEDC estimates, however, the implied

21. In order to be eligible for tax credits under the MEGA Act, an in-state applicant business must (a) maintain or create jobs in manufacturing, mining, research and development, wholesale and trade, or office operations; (b) create at least 50 full-time jobs in Michigan above current employment levels and maintain 50 for at least a year; and (c) gain the local government's "staff, financial, or economic commitment," which is generally demonstrated through award of IPT exemptions. If the applicant does not have an existing in-state presence its job creation requirement is increased to at least 100 full-time, in-state jobs maintained for each year the credit is awarded (unless an exemption applies). Citizens Research Council of Michigan, *Survey of Economic Development Programs*, 2007, p. 53.

22. The specific requirements that applicants must provide include (a) the number of jobs created or retained; (b) wage levels of jobs created or retained relative to other similar businesses; (c) total capital investment planned; (d) the cost differential associated with maintaining/creating jobs in Michigan relative to another location; (e) the potential impact of job retention/expansion proposed; and (f) the cost of the credit. Citizens Research Council of Michigan, *Survey of Economic Development Programs*, 2007, p. 53.

23. For example, PA 248 (2003) liberalized the MEGA Act's eligibility criteria and increased the number of credits available to "rural businesses." PA 283 (2006) decreased business wage requirements.

24. Michigan Compiled Laws (MCL) 207.808, §2.

25. MCL 207.808, §3c.

government expenditures per job claimed exceeds \$5,000. Moreover, it is likely that at least some of the jobs created as a result of a MEGA incentive are at the expense of other jobs in the state at competitors of the grant recipient or at firms that would have created jobs in the state if businesses taxes across the board were lower.

It should be noted that the MEGA program has been changed recently, so that the Michigan Economic Growth Authority now has more flexibility in awarding more and smaller incentives, and it appears to be pursuing a more aggressive auditing program. Our quantitative analysis of the program is based on the awards outstanding, most of which were awarded before the recent reforms in the MEGA program. While the data on recent MEGA awards is limited, the recent changes appear to be improvements to the program, so it is possible that the reformed program is more effective.

Public Act 381 (1996): Brownfield Redevelopment Financing Act. The Brownfield Redevelopment Financing Act establishes Michigan's Brownfield Redevelopment Authority to, "promote the revitalization, redevelopment, and reuse of certain property, including...tax reverted, blighted, or functionally obsolete property."²⁷ The tax incentive does not explicitly target any particular industry. Our focus in this report is on the incentives in PA 381, while recognizing that other incentives, such as state and federal funding, are also available for many sites.

Under the act, the Brownfield Redevelopment Authority may create brownfield redevelopment districts and help rehabilitation plans for qualifying property across the state. After their establishment, local brownfield authorities approve applications for brownfield credits on a project by project basis.²⁸ The Brownfield Redevelopment Authority is also authorized to grant tax credits towards MBT liability for investments in qualified sites.²⁹ The size and duration of tax

26. The MEDC claims, based on self-reported data from recipients of incentives, that a total of 395,183 jobs have been created through the 299 MEGA projects during this time period (120,864 of which were direct jobs created). These jobs are said to have resulted in more than \$100 billion in personal income and over \$15 billion in capital investment. Citizens Research Council of Michigan, *Survey of Economic Development Programs in Michigan*, 2007, p. 55, citing data from the Michigan Economic Development Corporation.

27. MCL 125.2651.

28. MCL 125.2654.

29. In order to qualify for the tax credits issued by the Brownfield Redevelopment Authority under the Brownfield Redeveloping Financing Act, applicant properties must be: (a) located in an approved Brownfield Redevelopment Authority district (or owned by a land bank); (b) undergoing construction, renovation, improvement, or other rehabilitation; and (c) pursuing a brownfield plan that may include environmental assessment, due care activities necessary to prevent the spread of contamination or the worsening of blight etc., and any clean-up or further activity deemed necessary by the Brownfield Redevelopment Authority.

incentives granted under the Brownfield Redevelopment Financing Act are determined on a case-by-case basis by the Brownfield Redevelopment Authority, which is given wide discretion in granting of incentives.³⁰

There are no explicit statutory accountability mechanisms regarding the tax credits themselves. The statute does not require public hearings before projects are awarded credits, although some local authorities hold such hearings, which provide an opportunity for property owners, officials from taxing jurisdictions whose millages may be subject to capture, citizens, and taxpayers of the relevant municipality to be heard.³¹ The relevant financial records of local authorities are public information, as established by the freedom of information act.

No adequate state-wide economic analyses of Brownfield Redevelopment Financing projects has been conducted.³² A 2003 joint project of the Downriver Area Brownfield Consortium (DABC) and Michigan State University was intended to develop a “Brownfields Reporter” database to “provide Brownfield Redevelopment Authorities (BRAs) with a tool to track their brownfield Tax Increment Financing (TIF) revenues and expenditures and accurately report these to the Michigan Department of Treasury.”³³ However, it appears that this project was terminated before it was implemented.

Despite the statute’s title that emphasizes brownfield redevelopment, the act allows for a significant portion of the funding to be directed to sites that are not actually brownfields. According to the definition in federal law, a “brownfield site” is real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.³⁴ The Brownfield Redevelopment Financing Act, however, extends financing to properties that are tax reverted, blighted or functionally obsolete, even when such properties are not contaminated. Indeed a

30. The main restrictions on credits are that they (a) must be used towards MBT liability (which may exceed the amount of a business’s liability); (b) must not exceed ten percent of the taxpayer’s investment in brownfield assessment and remediation; and (c) must not extend beyond ten years.

31. MCL 125.2655, §7.

32. The MEDC, relying on self-reported investment figures, estimated that approximately \$3.8 billion in private investment resulted from PA 381 tax incentives. Citizens Research Council of Michigan, *Survey of Economic Development Programs in Michigan*, 2007, p. 41. As we have noted, self-reported levels of investment should be considered a ceiling when considering the economic stimulus generated by tax incentives.

33. William H. Shields, “Brownfields Reporter Operator’s Manual,” Department of Agricultural Economics, Michigan State University, 2003.

34. Section 101 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9601). This statute contains several specific exclusions from the definition of a brownfield site.

recent presentation by Michigan brownfield authorities at a national conference emphasized that “Property does not have to be contaminated to be eligible for brownfield incentives in Michigan.”³⁵

Moreover, the standards for qualifying contaminated property are much lower under the Brownfield Redevelopment Financing Act than under federal programs such as the Superfund program. The Brownfield Redevelopment Financing Act incentives are structured so that even a low-cost clean-up project can qualify for a very large tax abatement, so long as it receives the appropriate local and MEDC approvals. Thus, the Michigan Brownfield programs have been transformed over time into more of a general economic redevelopment incentive and less of an environmental clean-up incentive.

To the extent that PA 381 encourages clean-up of contaminated sites, it offers benefits that are generally not achieved through the other tax abatement programs in Michigan. In many cases, however, PA 381 incentives are given to projects that do not appear to involve any significant environmental remediation. It appears that no state agency attempts to distinguish between projects that involve environmental clean-up and those that do not. It is not clear what proportion of the PA 381 incentives go to clean up of contaminated sites, and what proportion go to redevelopment of blighted or obsolete property that do not involve clean-up of environmental harm, and which may also qualify for tax incentives other than the brownfield incentive.

Public Act 146 (2000): Obsolete Property Rehabilitation Act. The Obsolete Property Rehabilitation Act (OPRA) created property tax incentives to encourage the rehabilitation and reuse of structures in “qualified locations” deemed sufficiently blighted or structurally obsolescent, when such rehabilitation projects might otherwise be discouraged by the additional taxes resulting from the increased property value. The standard for “blighted” and “structurally obsolescent” are the same as under the Brownfield Redevelopment Act.³⁶

The standard abatement for an approved property is in the form of freezing of the property tax liability at pre-rehabilitation level. Thus, the OPRA incentive is the avoidance of additional property tax that would otherwise be owed after property value is increased due to the rehabilitation. The abatement applies only to commercial business. Like the Brownfield tax credits, the incentive is primar-

35. “The Michigan Advantage: Michigan’s Extraordinary Brownfield Laws, Programs, and Partnerships,” presentation by the Michigan Department of Environmental Quality, MEDC and the Michigan State Housing Development Authority at the National Brownfield Conference, May 5, 2008.

36. In order to be eligible for the OPRA tax incentives, an applicant property must (a) be classified as a commercial property; (b) be considered blighted or functional obsolete under the standards of the Brownfield Redevelopment Act; and (c) be located in a pre-determined qualified local governmental unit that is considered distressed.

ily awarded based on the location and condition of the property to be rehabilitated, and not on any particular type of commercial business.

The local unit of government determines the size of abatements on a project-by-project basis, so the size of abatements may show wide variation. The local authority also sets the number of years for which the OPRA abatement will apply, up to the 12 years maximum.³⁷

The only accountability mechanisms for OPRA credits are at the local level. A public hearing and notice to local property owners is required before an obsolete property rehabilitation district can be established. Once a district is established, the local authority must hold a public hearing after receiving any application for OPRA tax credits.³⁸ The OPRA also allows local authorities to revoke credits if they find that the rehabilitation or construction that credits were granted within the authorized time period or based on failure to proceed in good faith with the operation of the rehabilitated facility.³⁹ The only data collected regarding OPRA credits appears to be the self-reported information on the OPRA application, and we are unaware of any other information being collected regarding the actual the number of jobs that resulted from these projects across the state.⁴⁰

It should be noted that “blighted” or “structurally obsolescent” properties may qualify for tax abatement under both the Brownfield Redevelopment Act and the Obsolete Property Rehabilitation Act, as well as the Commercial Rehabilitation Tax Abatement. Brownfields, however, qualify under only the Brownfield Redevelopment Act, unless they are also “blighted” or “structurally obsolescent.”

Public Act 210 (2005): Commercial Rehabilitation Tax Abatement. The Commercial Rehabilitation Tax Abatement Act should be considered an expansion of OPRA. This statute does not include any blight or obsolescence requirements. Instead this incentive applies more generally to property throughout the state in order to encourage rehabilitation projects on property dedicated to commercial usage.⁴¹ Like the Brownfields incentives and OPRA, the Commercial Rehabilitation Tax Abatement does not target any particular industry, though it

37. MCL 125.2781 et seq. The statute provides a mechanism for an additional extension. Through 2007, the average project was certified for 11 years, with most projects receiving certification for the full 12 years. Michigan Department of Treasury. *OPRA Activity List for All Years*.

38. MCL 125.2781 et seq.

39. MCL 125.2792.

40. According to the Michigan Department of Treasury’s records, the estimated amount of investment, evidently based solely on the self-reported data from OPRA applications, generated from all OPRA projects approved through 2007 was \$492 million. Michigan Department of Treasury, *OPRA Activity List for All Years*, 2007.

does disproportionately benefit industries that tend to have larger property tax liabilities.

As with the OPRA abatements, the standard Commercial Rehabilitation Tax Abatement is a freezing of the property tax liability at pre-rehabilitation level.⁴² Local authorities decide on the size of abatements on a project by project basis, with a slightly shorter maximum of ten years for the abatement (as compared to 12 years for OPRA abatements).⁴³

The requirements for data collection from applications and for public hearings are the same as for the OPRA. Like the OPRA abatements, the Commercial Rehabilitation Tax Abatement requires applicants to list the economic advantages expected from their project, including the number of jobs that are expected to be created or retained as a result of the project's completion. This self-reported data appears to be the only information collected.

The Commercial Rehabilitation Tax Abatement is relatively new, so it has had little impact. By the end of 2008, only four abatements had been granted, all in the area in and around St. Johns, Michigan, north of Lansing. We understand, however, that some additional abatements were likely to be granted in 2010.

PA 79 (2008) and MBT section 455: Film Incentives. Both PA 79 (2008), a new section to the Income Tax Act of 1967, and Section 455 of the MBT provide for tax credits and/or direct subsidies for development, preproduction, production, and post-production of a state-certified film production.⁴⁴ In addition to the economic and employment impact goals of other incentives, the film incentives appear to be intended to promote tourism.⁴⁵

41. Eligible properties for the Commercial Rehabilitation Tax Abatement must (a) be designated as commercial property, including businesses, multifamily housing, and often businesses previously used for industrial purposes, (b) be either 15 years or older or recipients of New Market Tax Credits, (c) undergo rehabilitation, after which they will be used primarily as a commercial property, and (d) be located in a commercial rehabilitation district in order to be eligible for the abatement. These commercial rehabilitation districts are established by the local unit of government and may be created in any township, village or city. MCL 207.841 et. seq.

42. Ibid.

43. Ibid.

44. In order to qualify for the film incentives provided under PA 79 (2008) and Section 455 of the MBT, a production company, recognized as "eligible" by the State of Michigan's film office, must spend at least \$50,000 in Michigan for the development, preproduction, production, and post-production of a state-certified (by the Film Office) production. All projects must be state-certified to verify that their content does not "depict obscene matter or an obscene performance." MCL 208.1455, §3d.

45. Michigan Senate Fiscal Agency, "Presentation on Michigan Film Credits," 23 October, 2008, by SFA economist David M. Zin.

The film credit incentives contain several reporting requirements to ensure compliance. It is likely that many of the awards are to films that attract significant public interest during filming, and where the public can see the finished result, so that the nature of the project allows for more transparency.⁴⁶ Though credits and subsidies are not granted for a certain number of years, as some property tax incentives are, the film incentives are both refundable and transferable, so that credits may be sold in advance to cover up-front costs.⁴⁷

The size and duration of the film incentives granted under these sections is highly discretionary and varies from project to project. Generally, tax credits are equivalent to 40 percent of “direct production expenditures” as defined in Section 455 of the MBT. If the film production is taking place in one of Michigan’s distressed areas, the production company is eligible for a larger credit—42 percent of the direct production expenditures. Though both PA 79 (2008) and Section 455 of the MBT grant the same tax credit, PA 79 (2008) extends the initial credit written into the MBT to income tax liability.

The Senate Fiscal Agency estimates that in FY 2008-09, the film incentives’ MBT abatements totaled over about \$148 million, while creating \$203 million in wages and \$339 million in economic activity.⁴⁸ When considering the taxes that were abated, the Senate Fiscal Agency estimated that this still results in a net loss of \$99 million for the state, and a cost per job (in credits) between \$40,000 and \$50,000.⁴⁹ Besides the high cost per job, which require continuing subsidies to remain in the state, the overall cost of the subsidies to the film industry divert funding that could be spent on other priorities.

The reason the film incentives attract film production to Michigan is because the industry is flexible in location and sensitive to cost. These same characteristics would also make the jobs created unlikely to be sustained and permanent. Michigan would likely experience a collapse in movie production activity relatively quickly if we lost our cost advantage. One of many ways this could happen is if one or more other states were to “up the ante” with an even-more-aggressive film credit, requiring Michigan to respond with a higher credit or larger subsidies to keep the industry in Michigan.

46. The MBT Act includes an accountability section relating to film incentives; the statute states that any taxpayer applying for the tax credits under MBT section 455, shall be liable for a civil penalty equal to the amount of the credit granted if information (regarding the filming, content, expenditures, etc.) is found to be fraudulent. The statute does not go on to explain, however, the process by which the Michigan Film Office could identify fraudulent behavior. MCL 208.1455.

47. Michigan Senate Fiscal Agency, “Presentation on Michigan Film Credits,” 23 October, 2008.

48. Ibid.

49. Ibid.

A recent analysis of the Michigan film credits produced an excellent survey of the film projects and the specific expenditures that resulted from them. However, the study failed to consider the “opportunity costs” of the film projects. This study by the Center for Economic Analysis at Michigan State University found, under the assumption that the incentive came at no cost of foregoing other policies, that the incentives for the film industry were very effective.⁵⁰ This study is useful for the information about the film credits, but its lack of consideration of any alternative policy ignores the clear and very significant opportunity cost of the program.

Moreover, it is important to note that state spending on areas such as education, infrastructure, and public safety attracts matching funds from outside the state. These funds are mainly used to purchase public goods that benefit the state in the long run, such as infrastructure and health spending. By contrast, Michigan's spending on the film credit does not provide similar benefits, other than perhaps some advertising for the state.

Whatever impact the film credit has on employment, it probably is only effective for years where a company gets the credit. In other words, there is no lasting effect, so it is highly likely that any benefits of additional films made in Michigan would dissipate within a short time.

Public Act 328 (1998): New Personal Property. The New Personal Property Tax Abatement allows for personal property tax exemptions intended to encourage economic development in certain designated distressed communities or zones. Recipients are exempt from the full millage rate on the eligible personal property they own.⁵¹

The duration of the New Personal Property Tax Abatement is generally more discretionary, and subject to more variation, than the other incentives considered in this report. There appear to be no current guidelines or restrictions on local authorities when determining the length of time they will certify new personal property tax abatements.⁵² PA 328 itself contains no public hearing requirement before abatements are granted. However, Michigan's General Prop-

50. Steven R. Miller and Abdul Abdulkadri, “The Economic Impact of Michigan's Motion Picture Production Industry and the Michigan Motion Picture Production Credit, Center for Economic Analysis, Michigan State University, February 6, 2009, pp. 8-9.

51. A business is eligible for a New Personal Property Tax Abatement if it (a) engages engage primarily in an eligible business activity, including manufacturing, research and development, trade, mining, and office operations; and (b) is located in an eligible district that was established to aid a distressed community; eligible districts include industrial development, renaissance, enterprise, Brownfield redevelopment, or empowerment zones, as well as authority, downtown, and development districts (as defined in Public Acts 281 and 197, and in the tax increment finance act). MCL 211, 9f. In addition, the subject property must be new to the state or was not taxed under Michigan's General Property Tax Act previously.

erty Tax Act requires that the local authority hold a hearing before approving or disapproving any new personal property tax exemption applications.⁵³

Unlike other tax incentives analyzed in this report, PA 328 does not require the local governing body or the applicant to specify the economic advantages of the tax credit's extension to their project. Local authority may choose on their own to collect such data.⁵⁴ Thus, data is extremely limited. The various information from local authorities suggest that awards are often to recipients who meet the eligibility requirements, and may be considering locating in another nearby Michigan city or other jurisdiction, but appear to be unlikely to leave the State of Michigan.⁵⁵

The PA 328 incentives eligibility was recently expanded, so that businesses authorized for a MEGA credit are now eligible to receive this incentive as well.

Public Act 376 (1996): Renaissance Zone Act. The Renaissance Zone Act, creates approximately 20 tax-free zones throughout the state, in which businesses and residents can receive substantial tax exemptions. These zones are intended to “facilitate economic development...stimulate industrial, commercial, and residential improvements...[and] prevent physical and infrastructure deterioration of geographic areas in this state.”⁵⁶

The only formal requirement for Renaissance Zone Act tax exemptions is that the business or individual locate within one of Michigan's renaissance zones.⁵⁷ No specific industries are targeted in the legislation, but industries with the highest overall tax liability would benefit most. Businesses in renaissance zones are exempt from all local, real, and personal property taxes, utility user taxes, and the State Education Tax.⁵⁸ Such businesses may also receive credits are available against MBT liability, depending on the amount of economic activity a business can claim to generate in a renaissance zone. Thus, local governments

52. The average length of certification for a new personal property tax abatement is 11 years, and the longest appears to be for 50 years by the City of Lansing. Michigan Department of Treasury, *PA 328 Activity List for All Years*, December 2007.

53. MCL 211.9f, §1.

54. For example, the Lansing Economic Development Corporation's “PA 328 of 1998 - Personal Property Tax Abatement” summarizes self-reported data for projects receiving credits under the authority of the Lansing Economic Development Corporation.

55. See, e.g., Lansing Economic Development Corporation, “PA 328 of 1998 - Personal Property Tax Abatement,” which lists recent recipients, including an established law firm that may have been considering leaving the city, but probably would not relocate to a different state.

56. MCL 125.268.

57. The number of renaissance zones may be changed with the passage of new legislation. The number of zones given here was provided by the Citizens Research Council of Michigan's *Survey of Economic Development Programs in Michigan*, published in June 2007.

and school districts are significantly affected by the granting of renaissance zone tax exemptions.

As with other tax incentives discussed in this report, the Renaissance Zone Act provides for little ongoing monitoring of the program, and most of the monitoring is done at the application stage rather than after results occur. The act establishes a Renaissance Zone Review Board that approves the establishment of such zones, based on specified criteria that include the applicant community's economic development plan, adverse economic and socioeconomic conditions, the local governing body's level of commitment to improving the area, and the extent of any new proposed business activity resulting from the renaissance zone. The local government, representing the local residents and businesses, must also submit a resolution stating that their residents and businesses residing within the zone would be exempt from taxes levied by that municipality.⁵⁹

The MEDC reports that over 400 projects were completed in renaissance zones.⁶⁰ The *Executive Budget Appendix on Tax Credits, Deductions and Exemptions* for fiscal year 2008 estimated that renaissance zones cost the state more than \$121 million in 2007 and would account for \$142 million in abated income, property, and business taxes in FY 2008.⁶¹ As we noted for other programs, the estimates of benefits are based almost entirely on self-reported data, which cannot be considered sufficiently reliable for any meaningful assessment of the economic and employment impacts of Michigan's renaissance zones.

58. The only taxes that businesses in renaissance zones must continue to pay are those mandated by the federal government, local bond obligations, and school sinking fund or special assessments. Citizens Research Council of Michigan. *Survey of Economic Development Programs in Michigan*, p. 64.

59. MCL 125.2687, §2.

60. MEDC estimated that these tax exemptions resulted in over \$2 billion in private investment from its enactment in 1996 to 2005. The MEDC's self-reported data further indicates that renaissance zones can be credited with the creation of 8,500 jobs in Michigan. Citizens Research Council of Michigan, *Survey of Economic Development Programs in Michigan*, 2007.

61. Office of the Governor and the Michigan Department of Treasury, *Executive Budget Appendix on Tax Credits, Deductions, and Exemptions*, 2008.

III. Estimating Costs and Benefits

In previous sections we have identified eight of the most important business tax incentives used by the State of Michigan to spur economic development, and several problems that hamper both the effectiveness of the programs and policy-makers' ability to evaluate effectiveness.

Nevertheless, it is also important to identify what we *can* tell about the effectiveness of these programs. This section lays out the elements of a good approach for evaluating business tax incentives, identifies the unavoidable difficulties in such evaluations, and describes the model we will use to evaluate tax incentives.

ELEMENTS OF A GOOD APPROACH

Most tax policies are evaluated in terms of their fiscal impact, which has implications for job creation and economic growth. Fiscal impact includes the direct tax revenue and expenditure effects. The incentives we examine also are intended, to varying degrees, to promote economic activity, and particularly employment, through the mechanism of abating certain taxes or, in the case of the film credit, subsidizing certain activities.

Because the claimed fiscal and employment impacts of a proposed tax policy can affect political support for a policy, and sometimes taxpayer funding, an incentive often exists to exaggerate the benefits.

Anderson Economic Group has completed a number of other reliable impact assessments.⁶² Our analysis uses a consistent, conservative methodology that attempts to avoid double-counting of costs or benefits, properly accounts for the shifting and substitution of economic activity, and does not unnecessarily inflate the impact by using excessive multipliers.⁶³ Unfortunately, many other impact reports do not follow a consistent methodology nor a conservative approach, and we caution against comparing the results from this analysis with "impact" assessments.

For this analysis, it is important to separate the *effectiveness* of the incentive in stimulating new business activity (including adding employment) from the *cost* of doing so (including the additional taxes, and resulting lower employment, at other businesses in the state, and any reduction in government tax revenue). Separating these allowed for an analysis of the net benefit of each tax program.

62. Previous Anderson Economic Group fiscal, economic and employment impact reports and other public policy analyses are available on the Anderson Economic Group web site at: www.AndersonEconomicGroup.com.

63. The basis for this methodology is stated in *Business Economics and Finance*, Patrick L. Anderson, CRC Press, 2004.

In particular, the net effect of a specific tax incentive on tax revenue is the revenue generated as compared to the alternative of an across-the-board tax reduction to all property or revenue in the relevant tax base. This net effect reflects both the loss of any effectiveness of an incentive program and the gains from a marginally lower tax rate on other businesses. Similarly, the net employment and earnings effects implied by the change in taxable activity, as compared to the alternative of employment and earnings levels following an across-the-board tax reduction to all property or revenue in the relevant tax base.

UNAVOIDABLE DIFFICULTIES

Any analysis of tax incentives must contend with the difficulties of disentangling many disparate causes of economic growth or decline. This difficulty applied to the analysis in this report as well. Besides this and other general challenges to any tax analysis, this particular analysis encounters additional difficulties specific to the analysis of Michigan tax incentive programs, including:

Lack of Data

In our May 2009 report summarizing the first phase of our research on business tax incentives, we found that one barrier to policymakers in evaluating our current slate of business tax incentives is inconsistent availability of data. Indeed, for some incentives there is almost no publicly available data. For others, the available data is not detailed enough to allow basic analysis, such as examining the distribution of tax credits by geography or industry, to be undertaken. Where basic data is available, it is often presented in a format that requires a tremendous amount of labor to render it usable. Besides making analysis of these programs more difficult, the lack of data makes the use of tax incentives much less transparent to tax payers and policy makers.

The only quantitative estimate available is the nominal tax expenditure. The nominal tax expenditure is the theoretical amount of tax that would have been collected, if the activity would have continued with no change even if the tax abatement did not exist.

TABLE 3. Nominal Tax Expenditures (2008)

Tax Incentives	Nominal Tax Expenditures
PA 198: Industrial Property Tax Abatement	\$310,000,000
PA 24: Michigan Economic Growth Authority Act	\$140,704,000
PA 381: Brownfield Redevelopment Financing Act	\$31,056,000
PA 210: Commercial Rehabilitation Tax Abatement	\$163,551*
PA 146: Obsolete Property Rehabilitation Act	\$3,500,000
PA 79 and Section 455 of MBT: Film Incentives	\$148,800,000
PA 328: New Personal Property	\$75,000,000*
PA 376: Renaissance Zone Act	\$142,380,000

Source: Tax Expenditure Appendix, Executive Budget FY 2008

Analysis: Anderson Economic Group, LLC

**AEG estimates used for individual incentives for which no data are available.*

Approvals and Reported Effects are Affected by Self-interest

Much of the limited available data is from self-interested reporting. For example, applicants for MEGA grants must report the number of jobs they will create or retain if they receive the grant, although there is very little auditing or verification of the information.

Self-interest also plagues the awarding of some incentives. For example, the film incentives authorized under PA 79 of 2008 can be awarded to any production deemed “eligible” by the Michigan Film Office. This arrangement may not result in optimal use of taxpayer dollars since part of the Film Office’s perceived level of success will rest on the *number* of films made with the aid of credits and the *dollar amount* of incentives awarded. In contrast, no one will receive public recognition for film proposals turned down.

Thus, both the recipient company and the state government often have an incentive to allow inflated reports of job creation to stand unchallenged.

Unknown Counter-factual Outcomes

A more fundamental problem faced by would-be researchers of business tax incentives is to go beyond what happened when an incentive was granted to what *would have happened* if the incentive were not granted. As discussed above, a credible economic impact study must compare the world to a counter-factual world where a policy change or an action did not take place. In the case of business tax incentives, it is often extremely difficult to know whether a business would have expanded or located in the state even without a tax credit. We have discussed several times in this report the lack of data and the unreliability

of self-reported data available for projects that actually received incentives. There is even less information available regarding businesses that closed or chose not to expand in Michigan due to the tax burden, but might have stayed in business or expanded if they had been eligible for an incentive or if the process of obtaining an incentive were less burdensome.

Identifying a Revenue-Neutral Tax Policy

The identification of a revenue-neutral tax policy change can be complicated by a number of factors, including the institutional and statutory limitations of the taxing system. However, even ignoring institutional and statutory factors, specifying a fractional tax rate change that would exactly offset the revenue lost from a business tax incentive is close to impossible.⁶⁴

In practice the tax system is complicated by interactions between different components of the MBT and available (non-MEGA) credits, and the revenue from the MBT changes with the business cycle. Furthermore, attempting to precisely estimate the revenue-neutral tax rate change would probably require an iterative process, imprudent assumptions, or both. While it may be possible to do so, such an effort was well beyond the scope of this research.

A SIMULATION MODEL

We estimate the direct effects of a change in tax policy from one that features significant tax abatements (which we define as any selective tax abatement, credit, or rate reduction for the purpose of encouraging specific investment or operations in the state), to one that features a lower overall tax rate and the elimination of one or more selective abatements. We model each abatement program separately.

For each program, we define a tax base and segregate it into a non-abated tax base (on which the full statutory tax rate is imposed) and an abated tax base (on which a proportional reduction in the tax rate or base is allowed). The tax base for each tax incentive varies, depending on the current law for each incentive. For example, the total affected tax base for PA 198 is the taxable value of total real and personal industrial property. For PA 210, the total affected tax base is the taxable value of real commercial property. See Table 4 below, and Appendix

64. For example, the MEGA incentive results in a credit to the MBT, which includes both a gross receipts and an income tax component. We model it primarily as a gross receipts tax, and estimate that approximately \$1.4 billion of \$2.1 billion in annual tax revenue is produced primarily due to this component. A 10 percent reduction in the tax rate would roughly offset \$140 million in MEGA credits. This is the alternative tax policy used in our report, as indicated in Table 5 and in the discussion of MEGA.

A, “Assumptions and Inputs for Economic Impact Analysis of Major Tax Incentives” on page A-7.

TABLE 4. Total Size of Affected Tax Base for Selected Tax Incentives

Tax Incentive	Tax Base Affected	Total Size of Affected Tax Base
PA 198: Industrial Property Tax Abatement	Real and Personal Industrial Property	\$34,006,154,307
PA 24: Michigan Economic Growth Authority Act	Industrial and Commercial Gross Receipts	\$180,648,800,000
PA 381: Brownfield Redevelopment Financing Act	Contaminated, Blighted or Functionally Obsolete Property	\$96,249,405,485
PA 210: Commercial Rehabilitation Tax Abatement	Commercial Business Property	\$52,277,597,684
PA 146: Obsolete Property Rehabilitation Act	Blighted or Functionally Obsolete Commercial Property	\$52,277,597,684
PA 79 and Section 455 of MBT: Film Incentives	Private Sector Payroll	\$132,600,000,000
PA 328: New Personal Property	Personal Property	\$29,106,750,184
PA 376: Renaissance Zone Act	Income, Property, and Business Activity	\$101,673,663,039

Source: Taxable Valuations (Green Book) State Totals Report 2009; Commercial, Industrial and Utility Property Tax Report 2008

Analysis: Anderson Economic Group, LLC

To model the direct effect of a policy change, we use three sets of parameters: the primary factors, behavior parameters, and employment ratios. Some of these parameters could be measured directly, calculated from other information, or estimated with reasonable certainty. Other parameters, particularly the behavior parameters, required more professional judgment, which we have attempted to note where appropriate.

The primary factors for each program are:

- the tax base, which we segregate into:
 1. a non-abated tax base (on which the full statutory tax rate is imposed), and
 2. an abated tax base (on which a proportional reduction in the tax rate or base is allowed);⁶⁵
- a representative current tax rate, which is intended to be the average tax rate for businesses in the relevant tax bases (or a representative blended rate for the incentives that involve direct subsidies or more than one tax base);
- the abatement as a proportion of the current tax rate (or as a proportion of the blended tax rate, in which case the proportion could be greater than 100 percent for incentives that involve direct subsidies or more than one tax base);
- the nominal tax expenditures for the program in 2008; and

⁶⁵For tax abatement programs that involve multiple taxes (i.e. the MEGA and Renaissance Zone incentives), or an outright subsidy of operating expenditures (i.e. the film incentives), a hybrid tax base was constructed, along with a related tax rate and abatement fraction.

- the percentage reduction in tax rate under an alternative policy where abatement is canceled and replaced with a reduction in the underlying tax category.⁶⁶

The behavior parameters for each program are:

- the tax-price elasticity of supply, or proportional change in tax base due to a proportional change in the tax-price;⁶⁷
- the direct effectiveness of the incentive in the short run (three years), or share of the incentivized tax base that occurs primarily because of the incentive; and
- the direct effectiveness of the incentive in the long run (ten years).⁶⁸

The employment ratios for each program are:

- the ratio of the fully taxable tax base to the number of employees in the industry, and
- the ratio of employee income in the business industry to the tax base, based on statewide averages for affected industries.

66. A proportional reduction in the statutory tax rate that would accompany an elimination of the tax abatement program. We suggest a small change in rate, consistent with the intention of simulating a policy change that results in a small overall change in tax revenue.

67. We reviewed a large number of published articles, including a handful based on empirical research or reviews of the literature, on the tax-price elasticity of business employment. In general, the published research supports an assumption of a tax-price elasticity of between -0.1 and -0.6. We note that the definitions of the business tax, and the time periods for which the elasticity was estimated, were not consistent across all studies, and that much of the literature indicates the existence of a negative elasticity, but not a magnitude.

The sources we reviewed on the tax-price elasticity of business activity and the effectiveness of specific tax incentives included: Anderson, P., & Saltee, C., "Business Tax Burdens Across the 50 States," Anderson Economic Group, 2003 (which cites additional research); Bartik, T. J., "Solving the Problems of Economic Development Incentives," *Growth & Change*, 2005, 139-166; Bondonio, D., "Do Tax Incentives Affect Local Economic Growth? What Mean Impacts Miss in the Analysis of Enterprise Zone Policies," Center for Economic Studies, 2003; Citizens Research Council of Michigan, "Outline of the Michigan Tax System," 2008; LaFaive, M. D., & Hicks, M. J., "MEGA: A Retrospective Assessment," Mackinac Center for Public Policy, 2005; LeRoy, G., Lack, A., Walter, K., & Mattera, P., 2006, "The Geography of Incentives: Economic Development & Land Use In Michigan," Good Jobs First, 2006; Lockwood, A., "The Obsolete Property Rehabilitation Act," Michigan Department of Treasury Office of Revenue and Tax Analysis, 2004; Miller, S. R., & Abdulkadri, A., "The Economic Impact of Michigan's Motion Picture Production Industry & the Michigan Motion Picture Credit," Center for Economic Analysis, Michigan State University, 2009; Peters, A., & Fisher, P., "The Failures of Economic Development Incentives," *Journal of the American Planning Association*, 2004; Sands, G., & Reese, L. A., "Current Practices and Policy Recommendations Concerning Industrial Tax Abatements Under PA 198," Land Policy Institute, 2007; Zamaron, J., "Property Tax Abatement Programs," Michigan Economic Development Corporation, 2009; Zin, D. M. "Presentation on Michigan Film Credits," Michigan Senate Fiscal Agency, 2008.

68. These behavior parameters are explained in more detail in Appendix A, "Model Methodology" on page A-1.

Using these parameters allows us to examine many different variations of tax incentive programs and responsiveness of the underlying tax base to tax rate changes. This is much superior to adopting a blanket assumption that tax abatements “work” or “don’t work,” or adopting a blanket assumption that tax policy has either strong or weak effects on employment in a state. In particular, it is possible that some abatement programs do, in fact, encourage operations in the state, but are very expensive in terms of foregone tax revenue; some are not effective in encouraging additional employment in the state, but cost relatively little; some hit the policy sweet spot of creating large benefits at relatively little cost; and some are hugely expensive for very little actual benefit. This methodology allows us to arrive at different conclusions about different programs.

We list the relevant equations and variable definitions in Appendix A, “Model Methodology” on page A-1. For the extensive calculations performed for multiple programs under varying assumptions, we coded these equations and variables into a model using Matlab software.

IV. Results

Using the model identified in “Estimating Costs and Benefits” on page 28, we have estimated the economic benefits of eight of the most important tax incentives used by the State of Michigan. In this section we state the assumptions that went into our analytical model and the results of our analysis. Specifically, the model allows us to quantify the economic costs and benefits in terms of:

1. The net tax expenditure by the State as a result of the abatement program.
1. The net employment impact on the State, including jobs created and retained.
2. The net earnings impact on State of Michigan residents.

To do this, the model compares the tax revenue, employment, and earnings in the state under current law, and if the incentive program were repealed and replaced by a slight reduction in the underlying tax. This aspect of the model is discussed in further detail in “Estimating Costs and Benefits” on page 28 and “Model Methodology” on page A-1. We also discuss the prospects of each incentive program for having a short and long-term economic benefit on the State.

Table 5 below summarizes the numerical results of our economic model that are discussed in more detail in the remainder of this section.

Table 5. Effect of Alternative Policy Change: Abatement Cancellation and Tax Rate Reduction

Job Creation Performance and Tax Revenue Impact in AEG Simulation									
Tax Incentive	Implied Tax Base	Current Law Abatement Share	Alternative Tax Rate Change	3 Year Time Horizon			10 Year Time Horizon		
				Direct Employment Gained (Lost)	Direct Earnings Gained (Lost), millions	Net Direct Tax Revenue Change, millions	Direct Employment Gained (Lost)	Direct Earnings Gained (Lost), millions	Net Direct Tax Revenue Change, millions
PA 198 (1974): Industrial Property Tax Abatement	Real and personal industrial property	50%	-10.0%	-11,163	-\$311.3	-\$16.4	-4,188	-\$116.8	-\$3.6
PA 24 (1995) Michigan Economic Growth Authority Act ^d	Business gross receipts taxed by MBT ^b	200% ^c	-10.0%	8,284 ^d	\$1,081.2	\$44.5	17,739 ^d	\$2,315.3	\$57.9
PA 381 (1996): Brownfield Redevelopment Financing Act	Business real and personal property	25%	0.0%	-1,737	-\$32.2	\$0.6	-1,303	-\$24.1	\$1.2
PA 210 (2005): Commercial Rehabilitation Tax Abatement	Commercial real property	25%	0.0%	-224	-\$4.2	-\$0.2	-179	-\$3.3	-\$0.1
PA 146 (2000): Obsolete Property Rehabilitation Act	Commercial real property	50%	-1.0%	-11,530	-\$125.5	-\$21.3	-8,233	-\$89.6	-\$17.9
PA 79 (2008) and Section 455 of MBT: Film Incentives	Payroll on which income, sales, unemployment insurance, and MBT are paid	444% ^e	-0.5% ^f	4,252	\$363.8	\$25.0	6,591	\$563.8	\$37.0
PA 328 (1998): New Personal Property	Personal property	100%	-2.0%	-10,178	\$13.2	\$4.1	-2,813	-\$14.3	\$41.7
PA 376 (1996): Renaissance Zone Act	Income and property	100%	2.0% ^g	12,806 ^h	\$264.7	\$15.2	17,708 ^h	\$366.0	\$26.4

Analysis: *Anderson Economic Group, LLC*

See Appendix A for source data and methodology

Notes:

^aThis analysis includes all credits still in effect in 2009, including credits issued under at least three different versions of the MEGA program.

^bTaxes with multiple rates and bases have been approximated by a single rate, single base tax. For example, the MBT includes business income and gross receipts components—and a surcharge that affects both. In this case, we have simulated an equivalent tax on gross receipts that would only collect a similar amount of revenue.

^cUnder current law, the abatement share for certain incentives may be above 100% if the credits are refundable. MEGA credits awarded under PA 24 (1995) are refundable and often are than the recipient's MBT liability.

^dEstimates are for policy change affecting all MEGA credits issued since 2000. Changing only the post-2008 MEGA policy would have a different effect.

^eUnder current law, the abatement share for certain incentives may be above 100% if the credits are refundable. The film incentives award refundable tax credits that amount to a subsidy of operating expenditures in excess of the recipient's tax liability.

^fThe film incentives are tied to qualified payroll and expenditures by film production companies. Since these expenditures result in tax revenue to the state through multiple channels, including the individual income and sales taxes, the "alternative tax rate change" could apply to multiple taxes, or could be applied to a single tax with a rate change that affects a similar amount of revenue.

^gTaxes with multiple rates and bases have been approximated by a single rate, single base tax. As such, the "alternative tax rate change" could apply to multiple taxes, or could be applied to a single tax with a rate change that affects a similar amount of revenue.

^hEstimates are for all Renaissance Zone credits still in effect in 2009. We note that the Renaissance Zone act is scheduled to be phased out.

Results

PA 198: INDUSTRIAL PROPERTY TAX ABATEMENT

Assumptions and Inputs

Our analytical model primarily relied on the following parameters for PA 198:

TABLE 6. Model Parameters for PA 198

Factors	Values
Tax Base Affected	Real and Personal Industrial Property
Total Size of Affected Tax Base	\$34,006,154,307
<i>Abated Tax Base</i>	\$6,960,931,266
Alternative Tax Reduction	-10.0%
Tax Price Elasticity	-0.35
Effectiveness: share of incentivized jobs directly created by incentive	50%
Effectiveness: jobs retained 10 years later	40%
Average Affected Tax Base Per Worker	\$39,918
Ratio: Personal Income to Tax Base	1.4316

Analysis: Anderson Economic Group, LLC

Behavioral Parameters for PA 198

Our tax price elasticity is in the middle of the range for the incentive programs we considered, because businesses are sensitive to their industrial property taxes, among other factors. Our direct effectiveness (proportion of resulting economic activity that would not have occurred without the incentive) is on the low end for incentives we considered, based on our judgment and the assessments of experts we interviewed. It appears that this incentive is widely available and often has more effect on where a business locates within Michigan rather than on whether a business locates in Michigan or another state. The full set of assumptions and inputs for PA 198 is shown in Table A-1 in the Appendix.

Impact on Tax Revenue

We find that the Industrial Property Tax Abatement program results in \$16.4 million per year in the short run (three years after abatement) in additional direct tax revenue in Michigan than would have been collected if the program was replaced with the alternative of a small tax abatement for all industrial property. This net direct tax impact falls to \$3.6 million by the tenth year after the incentive.

Impact on Direct Employment and Earnings

We find that the State of Michigan has 11,163 more jobs and over \$300 million more in earnings than it would have without PA 198 in the short run, three years after the incentive. The impact on employment and earnings is lower in the long run, ten years after the incentive.

Results

As we note in our discussion of “PA 198: Industrial Property Tax Abatement” on page 15, previous research has been critical of IPT abatements as an economic development strategy, and there is at least a theoretical reason to believe that more economic activity could be better promoted by lowering property tax rates for every Michigan business. Our analysis, however, finds that the benefits of the program outweigh the costs, so that the net effect is positive.

PA 24: MICHIGAN ECONOMIC GROWTH AUTHORITY ACT

Assumptions and Inputs

Our analytical model primarily relied on the following parameters for PA 24:

TABLE 7. Model Parameters for PA 24

Factors	Values
Tax Base Affected	Industrial and Commercial Gross Receipts
Total Size of Affected Tax Base	\$180,648,800,000
Abated Tax Base	\$10,155,091,765
Alternative Tax Reduction	-10.0%
Tax Price Elasticity	-0.35
Effectiveness: share of incentivized jobs directly created by incentive	50%
Effectiveness: jobs retained 10 years later	40%
Average Affected Tax Base Per Worker	\$107,405
Ratio: Personal Income to Tax Base	0.8229

Analysis: Anderson Economic Group, LLC

See Appendix A for source data and methodology

Behavioral Parameters for PA 24

Our tax price elasticity is in the middle of the range for the incentive programs we considered, because businesses are sensitive to the taxes being abated by the MEGA program. Our direct effectiveness (proportion of resulting economic activity that would not have occurred without the incentive) is about average for the incentives we considered. We believe that the effectiveness formerly was higher when the program was more selective and had stricter criteria, but has fallen recently as more businesses are eligible for, and are receiving, MEGA incentives. The MEGA program was again changed in 2008, but the share of the credits that reflect the post-2008 changes is still small. The full set of assumptions and inputs for PA 24 is shown in Table A-1 in the Appendix.

Impact on Tax Revenue

We find that the Michigan Economic Growth Authority Act tax incentive program results in \$44.5 million per year less in the short run (three years after abatement) in direct tax revenue in Michigan than would have been collected if the program was replaced with the alternative of an approximately revenue-neu-

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tral cut in the MBT for all businesses. This net direct tax impact is 57.9 million in tax revenue reduction by the tenth year after the incentive.

Impact on Employment and Earnings

We find that the State of Michigan has 8,248 fewer jobs and over \$1 billion less in earnings than it would have without PA 24 in the short run, three years after the incentive. The impact on employment and earnings is significantly more negative the long run, ten years after the incentive.

PA 381: BROWNFIELD REDEVELOPMENT FINANCING ACT

Assumptions and Inputs

Our analytical model primarily relied on the following parameters for PA 381:

TABLE 8. Model Parameters for PA 381

Factors	Values
Tax Base Affected	Contaminated, Blighted or Functionally Obsolete Property
Total Size of Affected Tax Base	\$96,249,405,485
Abated Tax Base	\$248,480,000
Alternative Tax Reduction	0.0%
Tax Price Elasticity	-0.20
Effectiveness: share of incentivized jobs directly created by incentive	20%
Effectiveness: jobs retained 10 years later	15%
Average Affected Tax Base Per Worker	\$28,613
Ratio: Personal Income to Tax Base	1.5446

Analysis: Anderson Economic Group, LLC

See Appendix A for source data and methodology

Behavioral Parameters for PA 381

Our tax price elasticity is lower than for most of the other incentive programs we considered, because while the brownfield incentives are important for business location decisions, the responsiveness does not appear to be as high as for other factors. Our direct effectiveness (proportion of resulting economic activity that would not have occurred without the incentive) is also lower than for most other incentives we considered, because other brownfield incentives (Superfund, etc.) are available and the program may have more effect in directing decisions to different sites in Michigan rather than attracting businesses that would otherwise locate elsewhere, as compared to other incentive programs we considered. The full set of assumptions and inputs for PA 198 is shown in Table A-1 in the Appendix.

Results

Impact on Tax Revenue

We find that the brownfield incentive program results in \$0.6 million reduction per year in the short run (three years after abatement) in direct tax revenue in Michigan, as compared to the amount that would have been collected if the program was eliminated. This program is not compared to an alternative policy because of the minimal impact on tax revenue. This net direct tax impact increases to \$1.2 million in reduced tax revenue by the tenth year after the incentive.

Impact on Direct Employment and Earnings

We find that the State of Michigan has 1,737 more jobs and over \$30 million more in earnings than it would have without PA 381 in the short run, three years after the incentive. The impact on employment and earnings is lower in the long run, ten years after the incentive.

PA 210: COMMERCIAL REHABILITATION TAX ABATEMENT

Assumptions and Inputs

Our analytical model primarily relied on the following parameters for PA 210:

TABLE 9. Model Parameters for PA 210

Factors	Values
Tax Base Affected	Commercial Business Property
Total Size of Affected Tax Base	\$52,277,597,684
Abated Tax Base	\$12,827,561
Alternative Tax Reduction	0.0%
Tax Price Elasticity	-0.20
Effectiveness: share of incentivized jobs directly created by incentive	50%
Effectiveness: jobs retained 10 years later	40%
Average Affected Tax Base Per Worker	\$20,811
Ratio: Personal Income to Tax Base	1.9125

Analysis: Anderson Economic Group, LLC

See Appendix A for source data and methodology

Behavioral Parameters for PA 210

Our tax price elasticity is lower than for most of the other incentive programs we considered, because the program is very new, and we found less evidence of responsiveness for this program than others we considered. This elasticity may increase over time. Our direct effectiveness (proportion of resulting economic activity that would not have occurred without the incentive) also in the middle

Results

of the range for incentives we considered, based on our judgment and the assessments of experts we interviewed that this incentive can help create economic activity in Michigan that would otherwise not occur. The full set of assumptions and inputs for PA 210 is shown in Table A-1 in the Appendix.

Impact on Tax Revenue

We find that the Commercial Rehabilitation Tax Abatement program results in \$0.2 million per year in the short run (three years after abatement) in additional direct tax revenue in Michigan than would have been collected if the program was eliminated. This program is not compared to an alternative policy because of the minimal impact on tax revenue. This net direct tax impact falls to \$0.1 million by the tenth year after the incentive. It should be noted that these tax impacts are based on very little data for this new program.

Impact on Direct Employment and Earnings

We find that the State of Michigan has 224 more jobs and over \$4 million more in earnings than it would have without PA 210 in the short run, three years after the incentive. The impact on employment and earnings is lower in the long run, ten years after the incentive.

PA 146: OBSOLETE PROPERTY REHABILITATION ACT

Assumptions and Inputs

Our analytical model primarily relied on the following parameters for PA 146:

TABLE 10. Model Parameters for PA 146

Factors	Values
Tax Base Affected	Blighted or Functionally Obsolete Commercial Property
Total Size of Affected Tax Base	\$52,277,597,684
Abated Tax Base	\$686,274,510
Alternative Tax Reduction	-1.0%
Tax Price Elasticity	-0.2
Effectiveness: share of incentivized jobs directly created by incentive	50%
Effectiveness: jobs retained 10 years later	40%
Average Affected Tax Base Per Worker	\$20,811
Ratio: Personal Income to Tax Base	1.9125

Analysis: Anderson Economic Group, LLC

See Appendix A for source data and methodology

Behavioral Parameters for PA 146

Our tax price elasticity is lower than for most of the other incentive programs we considered, because the program is not particularly targeted and we found less evidence of responsiveness for this program than others we considered. Our direct effectiveness (proportion of resulting economic activity that would not have occurred without the incentive) is in the middle of the range for incentives we considered, based on our judgment and the assessments of experts we interviewed that this incentive can help create economic activity in Michigan that would otherwise not occur. The full set of assumptions and inputs for PA 146 is shown in Table A-1 in the Appendix.

Impact on Tax Revenue

We find that the Obsolete Property Rehabilitation Act abatement program results in \$21.3 million per year in the short run (three years after abatement) in additional direct tax revenue in Michigan than would have been collected if the program was replaced with the alternative of a small tax abatement for all property. This net direct tax impact falls to \$17.9 million by the tenth year after the incentive.

Impact on Direct Employment and Earnings

We find that the State of Michigan has 11,530 more jobs and over \$125 million more in earnings than it would have without PA 146 in the short run, three years after the incentive. The impact on employment and earnings is lower in the long run, ten years after the incentive.

**PA 79 AND SECTION
455 OF THE MICHIGAN
BUSINESS TAX: FILM
INCENTIVES**

Assumptions and Inputs

Our analytical model primarily relied on the following parameters for PA 79:

TABLE 11. Model Parameters for PA 79 and Section 455 of the MBT

Factors	Values
Tax Base Affected	Private Sector Payroll
Total Size of Affected Tax Base	\$132,600,000,000
Abated Tax Base	\$153,800,000
Alternative Tax Reduction	-0.5%
Tax Price Elasticity	-0.60
Effectiveness: share of incentivized jobs directly created by incentive	95%
Effectiveness: jobs retained 10 years later	5%
Average Affected Tax Base Per Worker	\$59,189
Ratio: Personal Income to Tax Base	0.6919

Analysis: Anderson Economic Group, LLC

See Appendix A for source data and methodology

Behavioral Parameters for Film Incentives

Our tax price elasticity is higher than for any other incentive programs we considered, because the program is targeted to an industry that is unusually sensitive to short-run incentives. Our direct effectiveness (proportion of resulting economic activity that would not have occurred without the incentive) is also very high in the short run, because it is likely that most of the current film activity would not occur without this incentive. In the long run, however, we estimate that the effectiveness is very low, because jobs created from the incentive do not continue unless the incentive is offered again to new projects. The full set of assumptions and inputs for the film incentives is shown in Table A-1 in the Appendix.

Impact on Tax Revenue

We find that the film incentives programs result in \$25 million less revenues available to the state in the short run (three years after abatement) in direct tax revenues and outright subsidies, as compared to the revenue available to Michigan if the program was replaced with the alternative of an approximately revenue-neutral cut in the MBT for all businesses. This net direct impact increases to a \$37 million reduction in tax revenue by the tenth year after the incentive.

Results

Impact on Direct Employment and Earnings

We find that the State of Michigan has 4,252 fewer jobs and over \$300 million less in earnings than it would have without the film incentive program in the short run, three years after the incentive. The impact on employment and earnings is somewhat more negative the long run, ten years after the incentive.

PA 328: NEW PERSONAL PROPERTY

Assumptions and Inputs

Our analytical model primarily relied on the following parameters for PA 328:

TABLE 12. Model Parameters for PA 328

Factors	Values
Tax Base Affected	Personal Property
Total Size of Affected Tax Base	\$29,106,750,184
Abated Tax Base	\$1,470,588,235
Alternative Tax Reduction	\$25,958
Tax Price Elasticity	-0.40
Effectiveness: share of incentivized jobs directly created by incentive	33%
Effectiveness: jobs retained 10 years later	20%
Average Affected Tax Base Per Worker	\$25,958
Ratio: Personal Income to Tax Base	5.1075

Analysis: Anderson Economic Group, LLC

See Appendix A for source data and methodology

Behavioral Parameters for PA 328

Our tax price elasticity is in the middle of the range for the incentive programs we considered, because businesses are sensitive to their personal property taxes, among other factors. Our direct effectiveness (proportion of resulting economic activity that would not have occurred without the incentive) is on the low end for incentives we considered, based on our judgment and the assessments of experts we interviewed that this incentive is widely available and often has more effect on where a business locates within Michigan rather than on whether a business locates in Michigan or another state. The full set of assumptions and inputs for PA 328 is shown in Table A-1 in the Appendix.

Impact on Tax Revenue

We find that the New Personal Property abatement program results in \$4.1 million per year in the short run (three years after abatement) less direct tax revenue in Michigan than would have been collected if the program was replaced with the alternative of a small tax abatement for all property. This net direct tax impact increases substantially to \$41.7 million by the tenth year after the incentive.

Results

Impact on Direct Employment and Earnings

We find that Michigan has 10,178 more jobs and over \$13 million more in earnings than it would have without PA 328 in the short run, three years after the incentive. The impact on employment and earnings is lower in the long run, ten years after the incentive.

PA 376: RENAISSANCE ZONE ACT

Assumptions and Inputs

Our analytical model primarily relied on the following parameters for PA 376:

TABLE 13. Model Parameters for PA 376

Factors	Values
Tax Base Affected	Income, Property, and Business Activity
Total Size of Affected Tax Base	\$101,673,663,039
Abated Tax Base	\$1,851,974,646
Alternative Tax Reduction	-2.0%
Tax Price Elasticity	-0.50
Effectiveness: share of incentivized jobs directly created by incentive	33%
Effectiveness: jobs retained 10 years later	25%
Average Affected Tax Base Per Worker	\$30,225
Ratio: Personal Income to Tax Base	1.4622

Analysis: Anderson Economic Group, LLC

See Appendix A for source data and methodology

Behavioral Parameters for PA 376

Our tax price elasticity is higher than for most of the other incentive programs we considered, because the program is not particularly targeted and we found less evidence of responsiveness for this program than others we considered. Our direct effectiveness (proportion of resulting economic activity that would not have occurred without the incentive) is below the middle of the range for incentives we considered, based on our judgment and the assessments of experts we interviewed that this incentive often is awarded to businesses that would have located in Michigan, although perhaps in a different location, without this incentive. The full set of assumptions and inputs for PA 376 is shown in Table A-1 in the Appendix.

Impact on Tax Revenue

We find that the Renaissance Zone Act program results in \$15.2 million per year less in the short run (three years after abatement) in direct tax revenue in Michi-

Results

gan than would have been collected if the program was replaced with the alternative of an approximately revenue-neutral tax cut for businesses in the tax base. This net direct tax impact increases to a \$26.4 million reduction in tax revenue by the tenth year after the incentive.

Impact on Direct Employment and Earnings

We find that Michigan has 12,806 fewer jobs and over \$260 million less in earnings than it would have without PA 376 in the short run, three years after the incentive. The impact on employment and earnings is more negative the long run, ten years after the incentive.

Appendix A. Model Methodology

This section describes our methodology and assumptions used to evaluate the effectiveness of eight key business tax incentives in Michigan. The model is described below. The input assumptions used in the model are described in Table A-1 on page A-7.

We estimate the direct effects of a change in tax policy from one that features significant tax abatements (which we define as any selective tax abatement, credit, or rate reduction for the purpose of encouraging specific investment or operations in the state), to one that features a lower overall tax rate and the elimination of one or more selective abatements. We model each abatement program separately.

For each program, we define a tax base and segregate it into a non-abated tax base (on which the full statutory tax rate is imposed) and an abated tax base (on which a proportional reduction in the tax rate or base is allowed). For tax abatement programs that involve multiple taxes, or an outright subsidy of operating expenditures, a hybrid tax base must be constructed (along with a related tax rate and abatement fraction).

To model the direct effect of a policy change, we use the following behavioral parameters:

1. The tax-price elasticity of supply. This is defined as the proportional change in tax base due to a proportional change in the tax-price. This elasticity assumed to be different for different tax bases, consistent with both theory and empirical evidence.
2. The direct effectiveness of the incentive. This is defined as the share of the incentivized tax base that occurs primarily because of the incentive. This direct effectiveness parameter is assumed to be different for different abatement programs, consistent with our past research into the relevant effectiveness of tax incentive programs and with common-sense observation.
3. A proportional reduction in the statutory tax rate that would accompany an elimination of the tax abatement program. We suggest a small change in rate, consistent with the intention of simulating a policy change that results in a small overall change in tax revenue.

Note that this approach allows us to examine many different variations of tax incentive programs and responsiveness of the underlying tax base to tax rate changes. This is much superior to adopting a blanket assumption that tax abatements “work” or “don’t work,” or adopting a blanket assumption that tax policy has either strong or weak effects on employment in a state. In particular, it is possible that some abatement programs do, in fact, encourage operations in the state, but are very expensive in terms of foregone tax revenue; some are not effective in encouraging additional employment in the state, but cost relatively

little; some hit the policy sweet spot of creating large benefits at relatively little cost; and some are hugely expensive for very little actual benefit. This methodology allows us to arrive at different conclusions about different programs.

We list the relevant equations and variable definitions below. For the extensive calculations performed for multiple programs under varying assumptions, we coded these equations and variables into a model using Matlab software.

Limitations. Note that this approach does not attempt to model certain indirect effects, including:

- There is no policy “signaling” effect, which might encourage or discourage investors or operators to expand operations in the state because the state was changing policy.
- We did not model the related fiscal expenditure effect, primarily because the tax rate change was set to result in a modest change in overall tax revenue.
- We did not model the second-round incentive effect on the formerly-abated tax base, primarily because the abatement fractions encountered in actual programs (often 40 percent or higher) were substantially higher than the tax rate reductions (often one or two percent) we used to model the revenue effects.
- We did not include the deadweight loss associated with the expenses of lobbying for tax abatements, applying for them, or administering them.

Overall, the exclusion of these factors makes the quantitative analysis more conservative, in the sense of understating the potential tax revenue from a no-abatement policy. This understatement arises because the second-round incentive and the policy signaling effects of a policy change would presumably result in higher tax base and more revenue, and the elimination of the deadweight losses from the program would allow existing resources in both the private and public sector to be put to more productive use. The related fiscal effect could result in additional government employment if the resulting tax revenue was larger under the policy change; the exclusion of this factor could result in a slightly understated or overstated revenue effect.

Additional Observations. During our peer-review process, we received a number of observations, suggestions, and comments on the methodology and data used in the research. Most of these resulted in clarifications or corrections to the text of the report. However, there are a few additional observations that were not addressed specifically in the report that we wish to include here for completeness:

- As indicated in the text of the report, we selected an alternative policy that involved a small change to an existing tax rate, where such a tax change was practical. For two incentive programs, we concluded that a revenue-neutral tax rate change would have been so small as to be impractical. That means that the alternative policy for these programs was not considered in an identical analytical manner as the others.

-
- As indicated in the text of the report, the alternative tax policy was intended to produce an approximately revenue-neutral tax change. We did not attempt to estimate an exact revenue-neutral tax change, and believe such an estimate would require either an iterative calculation, or the adoption of imprudent assumptions. However, the use of an approximation means that some tax incentive programs were modeled implicitly assuming either a small tax revenue increase or decrease. See “Identifying a Revenue-Neutral Tax Policy” on page 31.
 - The purpose of the report was to estimate the effectiveness of tax incentive programs, in terms of jobs and tax revenue. In doing so, we used our professional judgment about the likely effects of an alternative tax policy given the existing Michigan economy. We did not take into account the government's ability or inability to select growing industries for tax incentive programs; or the existence of constituencies that favor retaining existing programs that benefit them (aside from noting the self-reported nature of much of the data on these programs).

**VARIABLE
DEFINITIONS AND
EQUATIONS**

Tax Base

B = current law tax base (including both abated, and non-abated, base);
base could be income, property, gross receipts, etc.

B_1 = non-abated tax base;

B_2 = tax base subject to abatement.

$$B = (B_1 + B_2).$$

\hat{B} = potential tax base, with lower rates and no abatement;

$$\hat{B} = (\hat{B}_1 + \hat{B}_2).$$

Tax Rates and Abatements

Current Law

t = statutory tax rate; $0 < t < 1$.

b = abatement fraction (share of tax base or rate abated); $0 < b < 1$.

$(1-b)t$ = rate on abated tax base.

Convention: abatement fraction can be applied to
either base, or rate, with same effect on revenue.

Potential No-Abatement Policy

\hat{t} = tax rate under no-abatement policy.

α = proportional change in tax rate under no-abatement policy;

$$\hat{t} = (1 + \alpha)t.$$

$\alpha < 0$ implies a tax rate reduction: $\hat{t} \leq t$.

Tax Revenue

Current Law

R = Current law tax revenue, given existing tax base, abatements, and rate.

$$R = B_1 \cdot t + B_2 \cdot (1 - b)t.$$

Theoretical Maximum Revenue (entire existing tax base and current law rate)

$$\bar{R} = B \cdot t = (B_1 + B_2) \cdot t.$$

Potential No-abatement Policy (with tax rate and tax base changes)

$$\hat{R} = (\hat{B}_1 + \hat{B}_2) \cdot \hat{t}.$$

$$R < \bar{R}; \quad \hat{R} < \bar{R}.$$

Elasticity, Effectiveness, and Policy Change Parameters

η = tax-price elasticity of supply; normally $\eta < 0$.

Tax-price elasticity is defined as proportional change in tax base due to a proportional change in the tax-price.

α = proportional change in tax rate under no-abatement policy;

$\alpha < 0 \Rightarrow \hat{t} \leq t$, a tax rate reduction.

eff = direct effectiveness of abatement program; defined as

share of incentivized tax base that occurs primarily because of the incentive. $0 \leq eff \leq 1$.

Change in Non-abated Tax Base

$$\frac{\Delta B_1}{B_1} = \alpha \cdot \eta$$

$$\frac{\text{change in tax base}}{\text{tax base}} = \left(\frac{\text{proportional change}}{\text{in tax rate}} \right) \cdot \left[\frac{\text{proportional change in tax base}}{\text{proportional change in tax rate}} \right]$$

= proportional change in tax base.

$$\hat{B}_1 = B_1 + \Delta B_1.$$

Change in Abated Tax Base

$$\Delta B_2 = (-eff) \cdot B_2 + C$$

$$\begin{aligned} \text{change in tax base} &= \left(\frac{\text{change due to}}{\text{abatement elimination}} \right) + \left[\frac{\text{change due to}}{\text{rate change}} \right] \\ &= \left\{ - \left(\frac{\text{share of tax base due}}{\text{to abatement}} \right) \cdot \text{tax base} \right\} + \left[\frac{\text{change due to}}{\text{rate change}} \right] \end{aligned}$$

Assumption: latter term is close enough to zero to ignore, for cases where abatement fraction is much larger than tax rate change, or where "effectiveness" parameter is estimated with rate change in mind.

$$\Delta B_2 \approx (-eff) \cdot B_2.$$

$$\hat{B}_2 \approx B_2 + \Delta B_2 = (1 - eff) \cdot B_2$$

Revenue from formerly-abated tax base

$$\hat{R}_2 = \hat{B}_2 \cdot \hat{t}.$$

Table A-1. Assumptions and Inputs for Economic Impact Analysis of Major Tax Incentives

Primary Factors		PA 198 (1974): Industrial Property Tax Abatement	PA 24 (1995): Michigan Economic Growth Authority Act	PA 381 (1996): Brownfield Redevelopment Financing Act	PA 210 (2005): Commercial Rehabilitation Tax Abatement	PA 146 (2000): Obsolete Property Rehabilitation Act	PA 79 (2008) and Section 435 of MBT: Film Incentives	PA 328 (1998): New Personal Property	PA 376 (1996): Property Renaissance Zone Act
/1	Estimated Amount of Projects Outstanding	6,065	441	81	4	214	10	140	47
/2	Base Affected	Real and Personal Industrial Property	Industrial and Commercial Gross Receipts	Contaminated, Blighted or Functionally Obsolete Property	Commercial Business Property	Functionally Obsolete Commercial Property	Private Sector Payroll	Personal Property	Income, Property, and Business Activity
/3	Total Size of Affected Tax Base	\$34,006,154,307	\$180,648,800,000	\$96,249,405,485	\$52,277,597,684	\$52,277,597,684	\$132,600,000,000	\$29,106,750,184	\$101,673,663,039
/4	Non-Abated Tax Base	\$27,045,223,041	\$170,493,708,235	\$96,000,957,485	\$52,264,770,123	\$51,591,323,174	\$132,446,200,000	\$27,636,161,949	\$99,821,688,393
/5	Abated Tax Base	\$6,960,931,266	\$10,155,091,765	\$248,448,000	\$12,827,561	\$686,274,510	\$153,800,000	\$1,470,588,235	\$1,851,974,646
/6	Representative Current Tax Rate	5.1%	1.46%	5.1%	5.1%	5.1%	9.0%	5.1%	7.7%
/7	Abatement as Proportion of Tax Rate	50%	200%	24.5%	25%	50%	44%	100%	100%
/8	Memo: Nominal Tax Expenditures, 2008	\$310,000,000	\$140,704,000	\$31,056,000	\$163,551	\$3,500,000	\$148,800,000	\$75,000,000	\$142,380,000
Behavioral Parameters									
/9	Tax Price Elasticity	-0.35	-0.35	-0.20	-0.20	-0.20	-0.60	-0.40	-0.50
/10	Effectiveness: Share of incentivized jobs directly created by incentive	50%	50%	20%	50%	50%	95%	33%	33%
/11	Effectiveness: Jobs retained 10 years later	40%	40%	15%	40%	40%	5%	20%	25%
Employment Parameters									
/12	Average Affected Tax Base Per Worker	\$39,918	\$107,405	\$28,613	\$20,811	\$20,811	\$59,189	\$25,958	\$30,225
/13	Alternative Tax reduction	-10.0%	-10.0%	0.0%	0.0%	-1.0%	-0.5%	-2.0%	-2.0%
/14	Ratio: Personal Income to Tax Base	1.4316	0.8229	1.5446	1.9125	1.9125	0.6919	5.1075	1.4622

Notes:

- /1 Estimates based on MEDC data, Michigan Department of Treasury list of activity reports, and professional judgment.
- /2 Based on eligibility criteria in enabling statutes.
- /3 Size of tax base base under current law. Property tax base data from Taxable Valuations (Green Book) State Totals Report 2009, and the Commercial, Industrial and Utility Property Tax Report 2008. MBT data from AEG estimates. Film production tax base based on data from the Michigan State University study (February 2009).
- /4 Non-abated tax base: (total tax base)-(portion of tax base eligible for abatement).
- /5 Portion of tax base who received abatement. Sources include treasury documents and AEG estimates based on professional judgment and nominal tax expenditures.
- /6 Relevant tax rate used for respective incentives. Where an incentive abates more than one tax base (e.g. MEGA and Renaissance Zones), the tax is approximated by one tax base and a weighted average rate on that base.
- /7 Film credits use rough estimate of taxes on payroll, including income, state payroll taxes, and sales taxes.
- /8 Applied statutory maximum for PA 198, PA 381 and PA 328. Other abatement shares set based on tax base and rate assumptions such that the model will accurately capture the abatement size. Proportion greater than 100% indicates direct subsidy or refundable credit greater than tax liability.
- /9 All reported expenditures from "Executive Budget Appendix on Tax Credits, Deductions, and Exemptions, 2008" except PA 210 and PA 328. PA 210: (Tax base eligible for abatement)*(Tax rate)*(Abatement share). PA 328: average of range estimated in previous report; see Patrick L. Anderson and Alex. L. Rosaen, "Michigan's Business Tax Incentives" (May 2009).

(Notes continued on next page)

- /9 Tax price elasticity (Percent change in base receiving abatement/Percent change in tax rate). Range of values: -0.1 to -0.6. "-.1" means demand is more inelastic, and "-0.6" means more elastic. Values based on professional judgment.
- /10 Range of value: 0-100%. "0%" means all projects would have occurred w/o the respective tax incentive, while "100%" means that none of the projects would have occurred without the incentive.
- /11 Range of value: 0-100%. "100%" means all jobs created by the incentive (due to projects that would not have occurred without the abatement) will remain 10 years after abatement expires. Professional judgments based on the targeted industry's level of integration with current state comparative advantages.
- /12 Ratio of tax base fully taxable to number of employees in respective industry, annualized.
- /13 Percentage reduction in tax rate under alternative policy where abatement is canceled and replaced with a reduction in the underlying tax.
- /14 Ratio of employee income in respective business industry to tax base, annualized. Estimated using professional judgement and based on statewide averages for affected industries. Film industry value estimated using data from Michigan State University study (February 2009).

Source: AEG Estimates; Citizens Research Council; Michigan State University Center for Economic Analysis; Michigan Department of Energy, Labor & Economic Growth; Michigan Department of Treasury; Michigan Economic Development Corporation; Michigan Film Office; Senate Fiscal Agency
Analysis: Anderson Economic Group, LLC

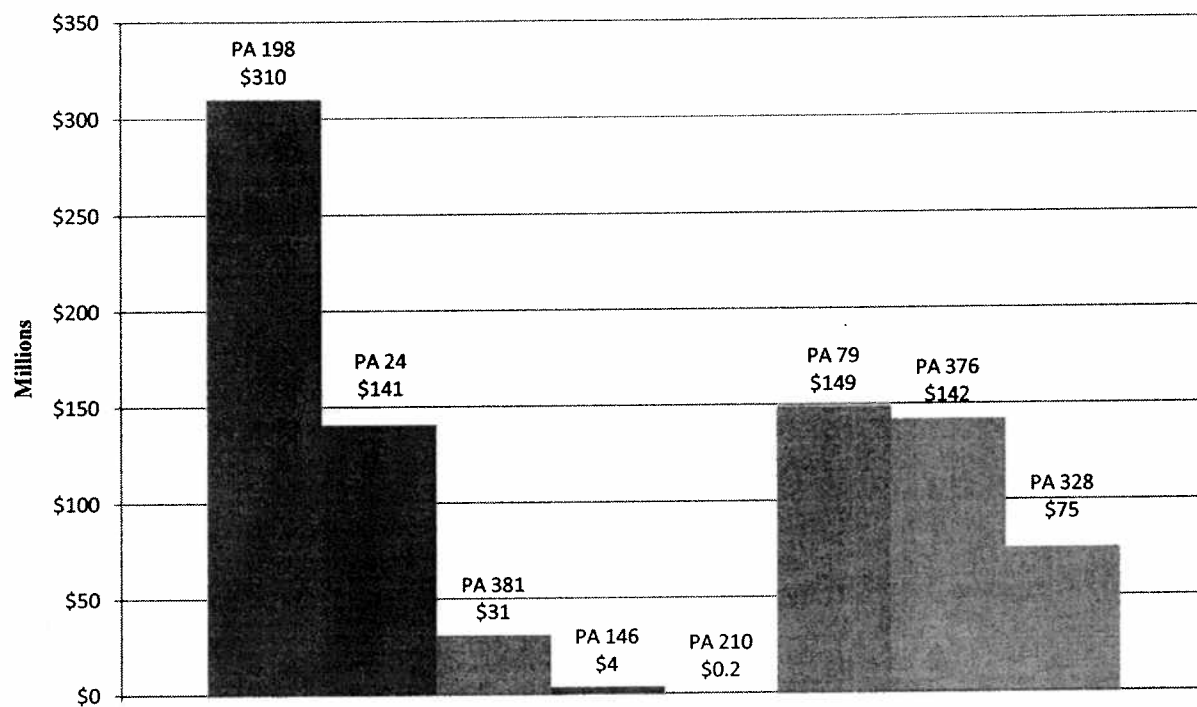
Appendix B. Data

DATA TABLES

Included in this appendix are the following tables:

1. Appendix Table B- 1, "Nominal Tax Expenditures, 2008 Estimates," on page 2.
2. Appendix Table B- 2, "Michigan Total Real and Personal Property Taxable Value by Industry, 2009," on page 3.
3. Appendix Table B- 3, "Michigan Industry Census of Total Wages and Average Employment by Industry, 2008," on page 4.

B-1. Nominal Tax Expenditures, 2008 Estimates



Notes:

Tax incentive "size" estimated as total forgone revenue based on current tax law, and does not consider behavioral effects.

PA 210 and PA 328 are AEG estimates; see Appendix Table A-1 .

Source: Tax Expenditure Appendix, Executive Budget FY 2008; AEG Estimates

Analysis: Anderson Economic Group, LLC

Table B-2. Michigan Total Real and Personal Property Taxable Value, 2009

Classification	Taxable Value
Real Property	
Agricultural	\$ 9,328,491,658
Commercial	\$ 52,277,597,684
Developmental	\$ 292,709,815
Industrial	\$ 22,264,683,650
Residential	\$ 247,030,748,353
Timber Cutover	\$ 136,125,171
Subtotal, Real Property	\$ 331,330,356,331
Personal Property	
Commercial Personal	\$ 9,965,653,494
Industrial Personal	\$ 11,741,470,657
All Other	\$ 7,399,626,033
Subtotal, Personal Property	\$ 29,106,750,184
Total Real and Personal Property	<u>\$ 360,437,106,515</u>

Source: Michigan Taxable Valuation (Greenbook) Report, 2009

Analysis: Anderson Economic Group, LLC

Table B-3. Michigan Industry Census of Total Wages and Average Employment by Industry, 2008

Industry	Total Wages	Average Employment
Commercial		
Health care and social assistance	\$22,192,813,965	525,063
Professional and technical services	\$17,723,119,812	239,938
Retail trade	\$11,876,915,296	474,875
Wholesale trade	\$10,501,447,419	165,025
Finance and insurance	\$8,733,965,412	145,220
Administrative and waste services	\$8,129,740,084	262,404
Management of companies and enterprises	\$5,632,260,229	54,239
Accommodation and food services	\$4,483,882,710	333,638
Information	\$3,501,664,356	61,081
Other services, except public administration	\$3,467,665,479	127,546
Educational services	\$2,000,735,864	61,991
Arts, entertainment, and recreation	\$1,737,180,182	60,952
Subtotal, Commercial	\$99,981,390,808	\$2,511,972
Industrial		
Manufacturing	\$34,507,647,524	575,814
Construction	\$7,568,745,501	149,495
Transportation and warehousing	\$4,503,098,121	100,031
Utilities	\$1,688,011,687	20,165
Mining	\$415,025,985	6,388
Subtotal, Industrial	\$48,682,528,818	\$851,893
Residential		
Real estate and rental and leasing	\$1,717,053,536	51,821
Subtotal, Residential	\$1,717,053,536	\$51,821
Agricultural		
Agriculture, forestry, fishing and hunting	\$618,426,082	25,636
Subtotal, Agricultural	\$618,426,082	\$25,636
Total, All Industries	\$150,999,399,244	\$3,441,321

Source: Michigan Department of Energy, Labor & Economic Growth
 Analysis: Anderson Economic Group, LLC

Appendix C. About Anderson Economic Group

ABOUT ANDERSON ECONOMIC GROUP

Anderson Economic Group, LLC is a consulting firm that specializes in economics, public policy, financial valuation, market research, and land use economics. AEG has offices in Chicago and East Lansing, Michigan, where they are headquartered.

AEG experts have extensive experience with tax policy in Michigan and other states, including:

- Authoring the 2006 law that repealed Michigan's Single Business Tax.
- Authoring analyses showing the costs and benefits of a state Earned Income Tax Credit. The state EITC was subsequently enacted in 2008.
- Editing and producing the *State Economic Handbook*, which contains economic, demographic, and political information about all 50 states. The book is published by Palgrave and is now in its third annual edition.
- Producing a 50 state business tax benchmarking study, now in its third annual edition. The work was originally commissioned by the Michigan House of Representatives, and now appears annually in our *State Economic Handbook*.
- Publishing an authoritative study on the "Two Penny" sales tax on services, which was passed and subsequently repealed by the Michigan Legislature in 2008.
- Working extensively on other tax issues in the state, including property, the Single Business and Michigan Business Taxes, Sales, and other taxes.

AEG's past clients include state and local governments, non-profit organizations, and private businesses. See "Representative Clients of AEG" on page 2. For more information about AEG, visit www.AndersonEconomicGroup.com

Exhibit 1. Representative Clients of AEG

Governments

- State of Michigan
- State of Wisconsin
- State of North Carolina
- State of Ohio
- Oakland County, Michigan
- Collier County, Florida
- Schoolcraft County, Michigan
- City of Detroit, Michigan
- City of Cincinnati, Ohio
- Province of Ontario
- Wayne County Port Authority

Businesses

- General Motors Corporation
- Ford Motor Company
- DaimlerChrysler
- Honda North America
- Delphi
- Visteon
- PG&E Generating
- AT&T
- Meijer
- Taubman Centers, Inc.
- The Detroit Lions
- Beck's North America
- Diageo-Guinness
- InBev USA
- Labatt USA

- Heineken USA
- The Gambrinus Company
- Soave Enterprises
- Wholesalers representing Labatt, Beck's, Anheuser-Busch, Miller, Molson, Heineken, Mondavi, and other brands.
- Toyota, Chrysler, Honda, Ford, Mercedes-Benz, BMW, Harley-Davidson, Suzuki and Lincoln-Mercury dealers, or their associations

Nonprofit and Trade Organizations

- International Mass Retailers Association
- Michigan Retailers Association
- Michigan Chamber of Commerce
- Michigan Manufacturers Association
- Automation Alley
- American Automobile Manufacturers Association
- Michigan State University
- Wayne State University
- University of Michigan
- The ACLU of Michigan
- Hudson Institute
- Van Andel Institute
- Service Employees International Union
- West Virginia High Technology Foundation Consortium
- Pulse Canada

ABOUT THE AUTHORS

Patrick L. Anderson

Mr. Anderson founded Anderson Economic Group in 1996, and serves as a Principal and Chief Executive Officer in the company.

Mr. Anderson has taken a leading role in several major public policy initiatives in his home state; he was the author of the 1992 Term Limit Amendment to the Michigan Constitution, and also the author of the 2006 initiated law that repealed the state's 4-decade-old Single Business Tax. Before founding Anderson Economic Group, Mr. Anderson was the deputy budget director for the

State of Michigan under Governor John Engler, and Chief of Staff for the Michigan Department of State.

Mr. Anderson has written over 100 published works, including the book *Business Economics and Finance* and the chapter on business valuation in the book *Litigation Economics*. He is also the executive editor of three editions of the *State Economic Handbook*. His 2004 article "Pocketbook Issues and the Presidency" and his 2009 paper "The Value of Private Businesses in the United States" have each been awarded honors for outstanding writing in business economics by the National Association of Business Economics. Anderson's views on the economy are often cited by national news media including *The Wall Street Journal*, *New York Times*, *National Public Radio*, and *Fox Business News*.

Mr. Anderson is a graduate of the University of Michigan, where he earned a Master of Public Policy degree and a Bachelor of Arts degree in political science. He is a member of the National Association for Business Economics and the National Association of Forensic Economists. The Michigan Chamber of Commerce awarded Mr. Anderson its 2006 *Leadership Michigan Distinguished Alumni* award for his civic and professional accomplishments.

Theodore R. Bolema

Dr. Bolema is a Principal at Anderson Economic Group, with experience in regulatory economics, economic damages analysis, and public policy analysis. Among his recent projects at AEG are several antitrust and commercial damages cases in federal and state courts where he served as an economic expert.

Prior to joining Anderson Economic Group, Dr. Bolema was a professor of finance and business law at Central Michigan University and Wayne State University, and also taught at the George Mason University School of Law, and Michigan State University. Prior to that, Bolema was an attorney with Weil, Gotshal & Manges, LLP, and served in the Antitrust Division of the U.S. Department of Justice for over seven years. He was also a Policy Advisor to the Office of Policy, Planning and Analysis of the U.S. Department of Energy.

Dr. Bolema's work has been awarded Best Qualitative Paper of 2006 from the International Academy of Business Disciplines, as well as the Distinguished Service Award from the Antitrust Division of the U.S. Department of Justice in 2000. Dr. Bolema has been cited as an expert on regulatory law and economics in many publications including *The Washington Post*, *The Wall Street Journal*, and the *Chicago Tribune*.

Dr. Bolema earned his Ph.D. in Economics from Michigan State University and holds a J.D. from the University of Michigan School of Law.

Alexander L. Rosaen

Mr. Rosaen is a Consultant at Anderson Economic Group, working in the Public Policy, Fiscal, and Economic Analysis practice areas. Mr. Rosaen's background is in applied economics and public finance.

Mr. Rosaen's recent work includes several economic and fiscal impact analyses, including of proposed real estate developments, power plants, and infrastructure projects; an analysis of the impact of federal tax incentives on the freight rail industry; and an analysis of the economic contribution that research universities make in the State of Michigan.

Prior to joining Anderson Economic Group, Mr. Rosaen worked for the Office of Retirement Services (part of the Michigan Department of Management and Budget) for the Benefit Plan Design group. He has also worked as a mechanical engineer for Williams International in Walled Lake, Michigan.

Mr. Rosaen holds a Masters in Public Policy from the Gerald R. Ford School of Public Policy at the University of Michigan. He also has a Masters of Science and a Bachelors of Science in mechanical engineering from the University of Michigan.